OBERLIN COLLEGE LIBRARY

The Journal of the
American Medical Association

VOL. XIX. CHICAGO, OCTOBER 29, 1892. No. 18.

ORIGINAL ARTICLES.

SAWS AND THEIR APPLICATION IN NASAL SURGERY.

Read in the Section of Laryngology and Otology at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY ALLEN DEVILBISS, M.D.,
OF TOLEDO, OHIO.

Woakes used small saws, and Siler recommended them for the removal of bone tissue in the nose. Bosworth reported a series of 166 operations of deformities of the nasal septum, with a saw of his own device and since that time they have been used almost exclusively to any other.

It is the best instrument for removing small bony projections that I have used, yet there is trouble in using it where the septum is deflected and a broad surface to be removed.

In these cases soon after we commence sawing, the spaces between the teeth fill up, the saw will fail to cut rapidly, and we are compelled to use pressure, clean the teeth or change saws.

I have also had cases where it was impossible to enter the saw far enough, either below or above, to have stroke sufficient to do any satisfactory work toward the removal of the parts, also in operations which require a larger access to the nasal passages than the natural ones for the removal of tumors from the cavities or naso-pharynx, which require incisions of bone to be made for their removal.

Some years ago I had quite a series of the above class of cases and with the instruments I could command at that time my success was not as satisfactory as I wished for.

It was this that led me to undertake to try to devise a saw so constructed that I could use its extreme end for cutting purposes, attacking the tumor directly in front.

I have been endeavoring to produce such a device ever since, sometimes thinking I had succeeded, at other times failed, but to-day I take pleasure in showing you the instrument that is the result of my prolonged effort, which has not only proven satisfactory to myself but to others.

You will see by examination that it is not much thicker than the ordinary saw and that its edges are protected by steel shields so that it may come in contact with soft parts and not injure them. Being so narrow that they pass into the slot the saw cuts. It can be used in connection with or without grooved director. If the operator uses the director he should place it above the portion that is to be separated from the septum, then pass the shield of the saw along its narrow groove, thus directing it through the surfaces to be cut with precision and certainty. I have seen cases where the grooved director could not be passed above the part. In these cases a hole can be bored through with a twist drill connected to the cable used to run the saw, so that it will do its work quickly. The grooved director can be passed through the opening thus made and the saw used as before described. This is not necessary, as a rule, in hands that have practiced the use of the saw with a view of studying direction.

The shield must be kept in the groove of the director and the cutting end of the saw parallel to a line that would correspond to the side of a normal septum.

The distance which the saw is to be carried into the nasal passages can be determined by measuring first with a probe, the distance from the anterior part of the nose to the posterior surface of the part to be removed, then place this measurement on the saw. This is not necessary to one accustomed to its use as the sense of touch will tell us when it is through. In this way we remove the part much more quickly and with less pain to the patient, and the plane of the part left will be straighter than it could possibly have been made with the ordinary saw used, which is liable to leave an uneven surface.

Bosworth, in his book on diseases of the nose and throat, page 304, makes the following statement in operations for fractured septum with thickening: "Objection has been made to these operations that they result in ulceration. Now, I wish to say, in as positive a manner as possible, that in no case have I had any such result. The subsequent treatment is nothing. The healing process requires no attention. The parts heal up kindly, and, as a rule, with no unpleasant symptoms during the process. It has been charged that bad cicatrices result. Again, I say that I have seen no such result in any case. The mucous membrane re-forms over the cut surface and at the end of two months it would be difficult to recognize the fact that any cutting had been done. Too much importance cannot be laid on the necessity of a perfectly straight, smooth-cut surface. In one or two instances in operating I bent my saw, which is exceedingly flexible, in such a way as to make a hollow cut, sawing in a curve, as it were, leaving a depression on the surface of the septum. Whenever I have made such a mistake there has been exceedingly great annoyance from delayed healing, owing to the fact that mucus and bloody pus accumulated in the depression and formed crusts, and thus markedly interfered with the healing process. And herein, it seems to me, lies an objection to the rougher operation of the gouge and the forceps in removing these obstructions, as leaving an irregular surface for the lodgment of mucus and secretions. We meet with no ulcerations in the nasal cavity, except as a result of syphilis or some blood-poisoning.

"Delayed healing may occur, but not ulceration, after the operation, and delayed healing, I am positive

can only be the result of unskillful operating.' Thus Dr. Bosworth testifies to the value of the plane surface.

Knowledge alone is an excellent thing, but knowledge and skill combined are what are necessary for the proper use of any instrument. Whatever saw we may use we must, by seeing, get our starting point and direction, then follow that course even though our light may be shut out. This skill cannot be acquired without patient practice; it need not be on the dead or living human subject because as long as we have butcher shops, material will be abundant. In order to distend the nasal opening for these operations or any otherpurpose, I have devised a nasal speculum which is self retaining if properly introduced. They are made out of steel piano wire and accomodate themselves to almost any form or size of opening without any material increase or decrease of pressure, because of a spiral spring arranged in connection with two rings which hold the nose sufficiently open. This is an advantage as it does not cause the patient pain by unnecessary stretching of the parts and therefore may remain as long as is needed. If it does not sufficiently open the nose for illumination another one may be placed with one ring against the septum the other one against the wing of the nose and neither one be in the way of the operator, whether they are used for explorative or operative purposes. I scarcely ever find it necessary to use more than one, and when I use but one in connection with the saw I always place one ring in the roof and the other in the floor of the vestibule of the nose, thereby making an oblong opening, the long side of which corresponds to the side of the saw and the narrow to its edge, which gives a chance to move the point of the instrument up or down in case the part to be sawed off is so wide as to make this movement necessary.

It will be observed in my paper that I have confined myself exclusively to septal thickenings with or without deflection, at the same time I may be permitted in conclusion to observe that this instrument may be effectively used in any of the various procedures in internal nasal surgery.

TREPHINING FOR MASTOID ABSCESS; WITH NOTES OF THIRTY-TWO CASES OPERATED ON AMONG 3,400 PATIENTS SEEN IN 1889, 1890 AND 1891.

Read before the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich, June, 1892.

BY B. ALEX. RANDALL, M.A., M.D.,

PROF. OF OTOLOGY, UNIV. OF PENN. AND PHILADELPHIA POLYCLINIC.

It is natural that otology should have shared in the general advance of surgery, and that there should be increasing resort to surgical measures in all aural cases where experience has shown that all milder measures are slow or inefficient. How far we will be justified in operative interference in the lines where other measures can often succeed, if persistently employed, or where failure would mean nothing very serious to the patient, are questions which we can leave to the gradual growth of experience. But there is a large and growing group of conditions where we have less free choice. There are cases where not a pound or even a ton of belated cure will avail; where the indications for operation may appear once only accompanied by conditions favorable to success, and in failing to take advantage of that opportunity we may seriously or fatally betray the confidence which has been bestowed in us as medical men. The indications of such conditions are not fully defined, and each case, in some measure, must be judged by itself; but certain principles have been fairly demonstrated anatomically and clinically, and their application in practice must be considered conscientiously by every man who assumes or retains charge of an aural case. The surgical enthusiasm of some men for special operations, or for operating in general, may need to be discounted; yet the fact remains that timidity does not constitute caution, nor is inaction always masterly and conservative.

One of the directions in which surgical intervention is generally called for, and sometimes most imperatively, is the matter of suppurative involvement of the mastoid portion of the temporal bone. Here we have a tract more or less prone to suffer from tympanic inflammation, surrounded by most important structures, and by its anatomical relations liable to have its lesions serious not only in threatening the hearing and other functions, but even imperiling the life.

I believe that there are many who have had such an experience as my own, and many more to whom the same is soon to come; and to these, these notes may have something of help. During the earlier years of my aural work few cases came to view in which questions of life and death seemed to press upon me for a prompt decision. Cases of mastoid empyema were rare and less surely recognized, the indications for operation were ill-defined, and I preferred to drift, congratulating myself upon my "masterly inaction" if the case came through safely, and laying no blame upon my timid conservatism if I failed, especially if I had done the daring deed of cutting down upon the bone, and rested content to proceed no farther. Having never seen a mastoid formally trephined in life, nor done it more than very rarely on the cadaver, its dangers and uncertainties seemed far more evident than its benefits; and cautious consultants restrained me when inclined to proceed at all boldly. Nor indeed, looking back, can I blame myself for more than one or two fatal sins of omission, and those with a saving question whether timely operation would have changed the result. With increased experience, widened practice and the epidemic of "la grippe," I could no longer hold such a position. The cases have multiplied around me in which the question of operation pressed, and there were many where the urgency could not be evaded. In the past fifteen months nearly forty cases of fluctuating swelling or other evidence of mastoid inflammation have aroused my solicitude; and while some have offered no alternative but immediate operation, many have been first vigorously treated with antiphlogistic measures and have fallen into three groups, where either resolution was secured, where operation had to be done later, or where the diagnosis cleared up and a mere superficial glandular abscess was found to constitute the true condition. Simple incision through the soft tissues has sufficed in a group of cases to secure fairly prompt and satisfactory results, no serious necrosis of the bone being found to demand further intervention. Yet there have been at least fifteen cases where it has been necessary to attack the bone, and it is to such that I would espe-

cially ask your attention now. The following table gives in brief notes of the thirty-two cases operated on in the three years of 1889—1891:

TABULAR STATEMENT OF MASTOID OPERATIONS DURING 1889-91.

1	1.19.89	E. 721	Mary Price	aged	41	left	Sinus to antrum	Cured.
2	2.8	E.	Albert Warner	"	8	left	Abscess evacuated	"
3	3.16	C. 4	John Brennan	"	2	right	Facial palsy; seques	"
4	4.9	E. 817	John H. Rodgers	"	38		Abscess evacuated	"
5	5.31	E. 876	Mary Deborah	"	2		" "	"
6	6.19	C. 66	Ada M. Emory	"	5m		" "	"
7	8.24	C. 99	Theresa Cohen	"	15m	right	Sinus and sequestrum	"
8	1.20.90	P. 263	Horace Anderson	"	8	left	Sinus to antrum	Recurred.
9	1.23	P. 294	Robert McClain	"	3	left	Abscess; seques. later	Cured.
10	6.9	P. 430	Wm. McDermott	"	73	left	Long-standing sinus	"
11	6.17	P. 443	John Maloney	"	8m	right	Sinus and sequestra	Died.
12	6.28	C.	Helen Reese	"	8	left	Sequestra	Improved.
13	9.5	E. 1375	Helen McCleary	"	8		Abscess evacuated	Cured.
14	9.16	E. 1388	Sarah E. Ward	"	3		" "	"
15	11.8	Pr. 155	Cora Ralston	"	10	right	Sinus and sequestra	"
16	11.10	C. 326	Joseph Barr	"	2	both	Facial palsy; seques	"
17	12.30	C.	David Rowland	"	2	right	Hemiplegia and convul.	"
18	1. 2.91	C.	Sadie Seidler	"	4	left	Abscess and sequestra	"
19	4.16	C. 49	Wm. H. Hanerford	"	3m		Abscess evacuated	"
20	4.16	C. 58	Wm. Devinney	"	12	right	Abscess and sinus	"
21	4.30	U. 549	Rebecca Mundy	"	24	right	Abscess and necrosis	"
22	5.28	C. 68	Charles Dougherty	"	4	left	Sinus to antrum	"
23	5.30	Pr. 202	Wm. S. Leper	"	30	left	Exostosis, epilepsy	Died.
24	7.11	U. 628	John Haslan	"	44	right	Abscess and caries	Cured.
25	7.24	U. 634	Richard McGee	"	6	right	Old sinus and seques.	"
26	7.28	Pr. 267	Adele Sterr	"	7	right	Sinus and sequestra	"
27	8.15	U. 649	Ellen Barnes	"	45	left	Abscess into digast.	"
28	8.16	U. 650	Josephine Swanlund	"	10	right	Abscess and caries	"
29	8.18	P. 912	Euphemia Robinson	"	11	left	Abscess and sinus	"
30	8.20	P. 863	Joseph McCulloch	"	11	right	Abscess and sequest.	"
31	9.15	Pr. 152	Horace Anderson	"	9	left	Recurrent abscess	"
32	12.30	C. 211	Charles G. Wade	"	10m	left	Abscess and sequestr.	"

Reviewing the work of the past three years, among upwards of a hundred cases, in which pain, swelling and other symptoms strongly threatened empyema or caries of the mastoid, I find records of thirty-two mastoid operations in which I attacked the bone. The mastoid cases constituted nearly 4 per cent. of the 3,400 new cases seen in this period, and about 1 per cent. were operated upon. A group of doubtful and imperfect records, which I have been unable to verify, ought to slightly lengthen the list; and in another series of cases mastoid suppuration or caries was attacked with curette or chisel through the auditory canal, after the method of Wolff; but neither group is here considered. Previously, in my seven years of service at the Episcopal Hospital and three years at the Children's, an additional series of cases was operated on, as to which I have not taken time to search out the scattered notes. During the first five months of 1892, I may mention, in passing, that I have had ten more operations, so my experience, though small compared to the hundreds of operations of Schwartze or J. Orne Greene, has still given me upwards of fifty operations. Only four deaths are known to have occurred in this series of operations, while ten or more have been noted among the others not operated upon, and this latter list but partially reveals the truth as to the fatality of the affection. In but one instance, that reported to the Am. Otolog. Soc. (Trans. 1891, p. 93), can I ascribe any blame to the operation for hastening death. Yet I am far from enthusiastic as to the harmlessness and urgency of the operation, nor should I be understood as arguing that every other aurist ought to have a similar series of operative cases among the same number of ear-patients.

There are several lessons which have been borne in upon me by these experiences, which promise to be of aid in my future work, and may be of help to others. First, of course, that operation is not always necessary unless the presence of pus is reasonably certain. Vigorous hot fomentations, aided by hot douching of the ear, may secure resolution in most threatening cases, and bring about a cure more speedily, safely and completely than any other method. Second, that pus should be freely evacuated as soon as discovered, and the search for it not limited to the external surface of the mastoid, but that its burrowing in many other directions must be borne in mind, and every reasonable means employed to discover its lurking places. Third, that it is a mistake to incise and evacuate pus collections without an anæsthetic to facilitate thorough exploration. In many cases it may be a real saving of suffering to the patient to avoid the discomfort of ether, yet it is so easy to stay the hand too soon, and leave undone work which is urgently required. General anæsthesia, with its freedom of procedure, is usually requisite. Fourth, that our object should be to remove the pathological condition present to the fullest possible extent, not resting content with the mere securing of drainage. Drilling or otherwise draining the mastoid cells may, therefore, be but a halfway measure and leave the patient to a long and tedious further process of caries and sequestrum formation, exposed for months to renewal of the serious symptoms which may have been abated, rather than relieved. Fifth, that the anatomical and pathological variations which may be present are so great that it is rarely possible to predict what will be met, and that full knowledge must be possessed of the anatomy of the part, the most cautious study by sight and finger and probe must be continually exercised, and the radical removal of all suspected tissue, bony or soft, must be done in all directions in which this is safe, leaving as little as may be to subsequent exfoliation. Sixth, that in the after-treatment the minimum of interference is desirable, the ample external wound being closed by sutures, with little packing, and all subsequent irrigations are to be regarded as undesirable and avoided as far as possible. The duration of after-treatment is in exactly inverse proportion to the thoroughness and success of the primary operation.

It is suggested, and very wisely, that the stewardesses of our ocean passenger steamships should be trained nurses. In case of sickness they would be more efficient, and they would, from their previous training, be more likely to keep the rooms sweet and wholesome.

OBSERVATION OF A CASE OF PURULENT OTITIS MEDIA, CEREBELLAR ABSCESS AND DEATH IN THREE WEEKS.

Read in the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY C. H. BURNETT, M.D.,
OF PHILADELPHIA, PA.

The patient was a little girl 5½ years old. She was attacked with acute otitis media January 24, 1892, and allowed by the family physician, a homœopathic one, to suffer a week without paracentesis of the membrane. At the end of that time spontaneous rupture occurred and muco-pus flowed from the meatus. The child, however, drooped and complained of headache, though she was free from earache. Gradually, by the end of the second week, the patient showed well-marked symptoms of cerebral abscess, and at the end of the third week the case was abandoned by the irregular practitioner and other consultants were called in. I recognized the condition of the patient when I was summoned to see her on February 10, 1892.

At my suggestion, Dr. Wm. W. Keen was called in with a view to his trephining for relief of the cerebral abscess. The precise position of the latter could not be located. Dr. Keen first opened the mastoid cavity, finding it filled with cheesy pus. He then made an inch trephine opening, the centre-pin being placed 1¼ inch above and behind the external auditory meatus. Exploration of the anterior and middle fossæ of the skull failed to reveal pus in either fossa. A grooved director passed into the tempero-sphenoidal lobe also failed to discover pus. The child recovered well from the ether, but gradually sank and died eleven hours after the operation. Post-mortem examination thirty-six hours later revealed an abscess in the right hemisphere (side of affected ear), containing 2 fluid ozs. of odorless pus.

Straight instruments have been found preferable to those set at an angle with the handle. The patient should be lifted as high as is safe in the anæsthetic state, which can be effected by having the head and shoulder piece of the operating table hinged. The teeth should be in a good condition before the operation of excision is performed.

In two cases of chronic catarrhal otitis media I have operated on both ears, with fair results, considering the degree of the deafness and sclerosis.

In a case of chronic purulent otitis media, in a boy 12 years old, excision of the swollen and granulating membrana tympani, with the malleus, was followed by cessation of discharge and an improvement in the hearing for isolated words, from 2 feet to 20 feet.

EARLY DIAGNOSES OF MASTOID DISEASE AND OPERATION AS A LIFE SAVING MEASURE, IN THE PREVENTION OF PYÆMIC AND MENINGITIC COMPLICATIONS.

Read in the Section of Laryngology and Otology at the Forty-third Annual Meeting of the American Medical Association, held in Detroit, Mich., June, 1892.

BY D. MILTON GREENE, M.D.,
OF GRAND RAPIDS, MICH.

[ABSTRACT.]

Five cases of suppuration in the mastoid cells following acute suppurative otitis media, without external signs of mastoid disease.

No pain referred to mastoid. Acute pain lasting until perforation of membrana tympani.

Temperature in four cases reached 104 or above, and in one only 102, before operation.

Operation in four cases with recovery. No operation in one, which resulted in perforation, pyæmia and death.

Early diagnosis made in latter case.

Autopsy.

Pain, redness, swelling and œdema over mastoid, not essentially signs of suppuration in cells.

Opened lateral sinus in one case with no bad effect.

ABSTRACT AND REMARKS ON A CASE OF THE SO-CALLED BEZOLD VARIETY OF MASTOIDITIS; MASTOTOMY; CRANIOTOMY; DEATH.

AUTOPSY: ABSCESS IN TEMPORAL LOBE AND CEREBELLAR HEMISPHERE; THROMBO-PHLEBITIS ON BOTH SIDES.

Read in the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY HERMAN KNAPP, M.D.,
OF NEW YORK.

Mr. President:—My paper contains a detailed description of one of the most important and instructive cases of my aural practice. It is, however, too long to be read before this Society. I, therefore, would beg permission to read only a résumé of it, and some general remarks, which I offer for publication in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, if acceptable, whereas I intend to publish the case in full in *The Archives of Otology* (July number, 1892).

If we recapitulate the history of the case, we find a young woman of good constitution, suffering during the course of a year from repeated attacks of acute naso-pharyngeal catarrh, extending into both ears. The left ear recovered. The fourth and later attacks showed implications of the right mastoid with marked meningitic irritation. She was pregnant; during the last months the attacks were more severe. The upper part of the sterno-mastoid become red, swollen, and painful; ten days after her confinement her physician made a deep incision into the swollen head of the muscle, liberating a good deal of pus. The relief being only temporary, I opened the mastoid from base to tip, found pus in the upper part, and kept the wound open by a perforated silver tube. The patient felt relief, but soon had a pleuritic exudation as an intercurrent disease, which disappeared in less than two weeks. Discharged from the hospital as cured she felt well for two weeks, then symptoms of cerebral irritation returned and with varying intensity lasted until her death, three months later. These symptoms were: Persistent headache, nausea, occasional vomiting, vertigo, stupor, impediment of speech, loss of appetite, constipation. The pulse at first varied between 70 and 88, later sank to 60 per minute, the temperature was between 98.4° to 101°, never changing rapidly. There were no convulsions, deliria, chills or abnormality of sensation. The ear never gave her any trouble, and there never was any discharge from the ear canal, though the drumhead and adjacent portion of the ear canal was red and bulging. Two months before death a sudden swelling was noticed below the head of the other (left) sterno-mastoid muscle. The eyes, examined with the ophthalmoscope, were found healthy until the last month, when the development of optic neuritis could be distinctly

watched. The extension of suppurative ear diseaes being diagnosticated, craniotomy was advised, but not consented to until the day before the patient's death.

The operation was made at the patient's house. The opening into the mastoid was enlarged and extended into the cranial cavity by an opening 3 cm. by 2 cm. Dura-mater and lateral sinus found healthy. Then the wound was extended into the tympanic attic by enlarging the mastoid antrum and removing part of the posterior wall of the ear canal with the chisel. No pus being found in the tympanic cavity and the bone being thick and hard, the middle cranial fossa was opened by chiseling a hole 2 cm. in diameter through the squamous portion of the temporal bone, beginning 1 cm. above the ear canal. No extra-dural suppuration was present. The dura-mater and the superficial layer of the brain were incised but found healthy. In the course of the operation the patient became pale and breathless. She was sustained by hypodermic injections of alcohol and by artificial respiration, the latter being kept up until the end of the operation. On account of her feeble condition I desisted from making exploratory incisions or punctures into the brain substance, considering the case then as absolutely hopeless. After the operation, even after the discontinuance of the artificial respiration, she rallied for three quarters of an hour, but then suddenly collapsed and died.

The *autopsy* showed, 1. A perforation in the medial bony surface of the tip of the mastoid process, verifying the diagnosis of the Bezold variety of mastoiditis. 2. The upper part of tympanic cavity densely filled with granulation tissues, but free from pus. 3. The right lateral sinus (that of the diseased ear), healthy, only filled with dark clotted blood. 4. The dura healthy throughout. 5. The pia over the right temporal lobe and the right cerebellar hemisphere milky, its small veins filled with pus. 6. The sinuses in the median line, those adjacent to the median line on the right side, and all the sinuses on the left side, furthermore, the left internal jugular vein as far as the swelling noticed underneath the upper portion of the left sterno-mastoid muscle, filled with pus (purulent thrombo-phlebitis). 7. In the right temporal lobe an abscess of the size of a walnut, and in the right cerebellar hemisphere another of the same size. 8. The remainder of the brain, especially the ventricles, normal. 9. Microscopic specimens and cultivations from the abscesses on the temporal lobe showed a moderate quantity of small bacilli, but chiefly the staphylococcus pyogenes aureus. Examination and cultivation of pus from the cerebellar abscess were negative.

Remarks.— This case is an example of an acute aural catarrh, leading to death through extension into the mastoid and cranial cavities. There never was otorrhœa, yet there was suppuration in the mastoid. No signs of otitis externa having been noticed the pyogenic germs must have travelled from the naso-pharynx (she suffered from acute attacks of coryza) through the Eustachian tube into the middle ear, and through the antrum into the mastoid process, here developing that slow form of mastoiditis which Bezold has so masterly described. This form is distinguished by a tendency to seek an outlet for its inflammatory products at different places along the inner table of the bone, viz.: *a*. Perforating it on the medial side of the tip and extending down into the neck alongside the sterno-mastoid muscle. *b*. Perforating the posterior wall of the ear canal and discharging its products through a fistula in the canal or through the tympanum. *c*. Perforating the cranial cavity, producing extra-dural suppuration and cerebral or cerebellar abscesses. I have seen examples of each of these varities of this form of mastoiditis, to which of late so much attention has been paid.

In our case the *course of the disease* was as follows: Attacks of coryza for several months. In September after an exposure by lying in the grass and being chilled, a violent attack of otitis media catarrhalis, in both ears, which improved, but was not completely cured. Four weeks later the first symptoms of mastoiditis. Improvement again, then in two months after an evening of gaity, the first cerebral symptoms with swelling of the mastoid extending downward. Evacuation of pus below ear brings relief for two weeks. Large opening of mastoid affords relief for four weeks, in spite of an intercurrent pleuritic effusion. Then the cranial symptoms are marked with short remissions. They are not so clear as to admit of a special diagnosis defining the nature and location of the morbid process. Death from cerebral abscess and thrombo-phlebitis.

The operation of craniotomy was done in the right way, and I would, if a case occurred, do it in the same manner again, only sooner. The uncertainty of a special diagnosis, not the surgical procedure, is the great difficulty in these cases, upon which also v. Bergmann dwells in his classical monograph on the surgical treatment of brain disease (1889).

Symptoms of meningitic irritation are marked in a great number of acute and sub-acute ear diseases, which recover by care without surgical interference. I am afraid that there is at the present day too great a tendency to open mastoids and skulls. Precision in the determination of the indications when or when not to operate can only be obtained by a critical comparison of many fatal cases, especially when post-mortem examinations have been made. As exploratory operations, such as gynecologists now practice laparotomy, both mastotomy and craniotomy are, in my opinion, not yet harmless enough to be justifiable in many cases.

Our case was remarkable by the absence of objective symptoms upon which commonly so much stress is laid.

1. There evidently was suppuration in the mastoid long before external swelling indicated it.

2. The absence of otorrhœa through the whole course is also remarkable and exceptional.

3. There was sinus thrombosis of great extent, without the common symptoms of rapid rise and fall of temperature. I measured the temperature whenever I called, and the sister of the patient did it in my absence, twice daily. It never rose above 101°. The sudden swelling at the left side of the neck, the side of the healthy ear, took me by surprise. It was peculiar in its shape, hard and round, about 2 cm. below the tip of the mastoid, with a sharp inferior limit. Ordinarily, the thrombosed jugular can be felt as a hard and painful cord along the side of the sterno-mastoid muscle. Each of the neurologists who examined the case with me thought that thrombo-phlebitis could be excluded.

4. The sinus thrombosis was more marked on the

side of the healthy ear. I can explain this only by the supposition that the formation of abscesses in the brain and cerebellum preceded the thrombo-phlebitis, and that the clotting of the right lateral sinus interrupted the circulation on the side of the diseased ear. The purulent contents of the small veins in the pia over the abscesses were emptied into the torcular and conveyed by the left lateral sinus to the left internal jugular. The abrupt swelling of the latter can be explained by plugging of the lower part of the vein with clotted blood before liquifaction of the thrombus had taken place, in the same way as the pus had been prevented from passing into the right internal jugular by blood clots in the lateral sinus found at the autopsy. The case shows how occult the objective symptoms of cerebral thrombo-phlebitis may be, and how unexpected the places in which they manifest themselves.

5. The cerebral abscesses showed, aside from the insignificant fever, only one objective symptom during the last month, that was the double *optic neuritis*. Choked disc, as far as experience has proven, is an inconstant and apparently late symptom of otitic brain disease. It does not always indicate a fatal termination of the case, and disappears when the patient recovers, even in cases of pyæmia.

I will conclude this paper with some remarks on the significance of the subjective cerebral symptoms in middle ear inflammation.

1. Transient headache, nausea, vomiting and dizziness in acute cases indicate meningitic irritation. They almost all recover with or without mastotomy, only a few exceptional cases of fatal termination being on record.

2. Persistent headache, nausea, vomiting, and dizziness, especially when the discharge from the ear diminishes, signify the transition of meningitic irritation into real meningitis, and indicate surgical interference, paracentesis of the drum membrane, especially the membrana flaccida when bulging, or opening of the mastoid à la Schwartze or Küster.

3. The above symptoms, with delirium, stupor, impediment of speech, chills, spasms, drowsiness and coma, signify fully developed intra-cranial suppuration. In the majority of such cases it may be difficult or impossible to discriminate between thrombo-phlebitis, extra-dural and cerebral or cerebellar abscess. The special diagnosis and localization, when strengthened by valuable objective symptoms, such as painful swelling and hardness of the internal jugular vein (sinus thrombosis), localized pain on percussion of the skull (abscess), a fistula in the cranial bones (extra-dural suppuration), may justify, even demand surgical interference, namely, opening the posterior cranial fossa to ligate and cleanse the lateral sinus, or opening the posterior or middle fossa to liberate the extra-dural accumulation of pus, or opening the posterior or middle fossa to evacuate an encephalic abscess.

Of all these varieties, a certain, though small number of cases is known in which the diagnosis was correctly made and the operation successfully performed.

Discussion.

Dr. Frothingham:—I speak first in the discussion of these papers, as one of the cases, the fifth reported by Dr. Greene, was seen by me and a more full and complete report is necessary for its proper consideration. In this case there had never been the least indication of mastoid disease that could be determined by local symptoms, or inferred as a probable explanation of any other symptoms. The pain had been in the ear and down the neck in the course of the internal jugular vein, occasionally some pain in the head near the vertex. There was no swelling or tenderness over the mastoid, or in that region, nor was there any feeling of fulness there, or any feeling of discomfort even on percussion over it.

On the fourth day of attack of middle ear disease, there were symptoms of metastatic pyæmia. Abscesses began to appear in the subcutaneous cellular tissue, and the severe rigors and other symptoms pointed to venous trombosis and pyæmia, rather than mastoid abscess. Pyæmia in acute mastoid abscess is not common. Its early appearance in this case, together with the other symptoms, indicated a more direct extension of the disease to the lateral sinus than would likely result from mastoid abscess, even had there been symptoms of retained pus in the mastoid cells. The early and severe rigors were more like those that characterize inflammatory thrombosis. The patient, after the continuance of acute symptoms for about two weeks, had begun to improve, and for a period the temperature had been nearly or quite normal. Then the high fever and frequent chills recurred, new metastatic abscesses began to form in the subcutaneous cellular tissue in different parts of the body; there was nausea and vomiting also. It was about five or six days after these symptoms had reappeared that I saw the case. There was at that time a hardened, cord-like swelling of the internal jugular vein, extending two-thirds of its course down the neck. The least jar, or pressure, or movement of the head caused great pain in this region, and the patient found it necessary to have the head inclined to that side in order to avoid the suffering caused by any traction of the muscle over it. There was nothing to indicate mastoid disease except the fever, and this was explained by the evident venous thrombosis and pyæmia which plainly existed. Besides, it was more like the fever that attends this condition than that of mastoid abscess. The patient seemed to have but a short time to live. With these symptoms I did not advise artificial perforation of the mastoid. I said to the attending physician and the friends of the patient that it was possible that there was pus in the mastoid cells, but it was not probable. That we could not advise operations on possibilities, but only upon probabilities. We have as yet no infallible rules to guide us in making this operation. While some cases are plain, and there are rules that seem imperative, there are yet cases with symptoms so obscure that no rules can be formulated for our guidance. Dr. Buck tells us that some years ago he formulated rules that he thought simple and practicable, but that further experience taught him that there must be numerous exceptions. It has happened to me twice to perforate the mastoid process where the symptoms of mastoid abscess were very well marked, and yet I found no pus, or other evidence of disease. The same has happened very often in the experience of others. Post-mortem examinations have been made when the symptoms of mastoid abscess had been well marked and it was confidently expected that pus would be found, and yet none was found after diligent search. While the operation of artificial perforation is comparatively safe, it is not without danger. Schwartze, who has had a most extensive experience in this operation, and has studied extensively the literature of the subject, attributes two per cent. of death to the operation itself. It should, therefore, only be advised where there is a probability that retained pus or other disease in the mastoid is the cause of the dangerous or unpleasant symptoms from which the patient suffers.

In giving the advice which I did in this case I had to decide at once with the evidence then before me, remembering that even in cases where the operation otherwise might be indicated, that when metastatic pyæmia is well marked the time when a useful purpose can be subserved by artificial perforation has probably gone by.

After a very careful consideration of this case since the post-mortem examination was made, I have been unable to find any reasonable excuse for an operation on the mastoid, based upon the symptoms that existed during the course of the disease. I am aware that without local symptoms, mastoid abscess has been diagnosed by the study of the temperature alone. But these were cases in which, by the study of the symptoms, other causes of the fever could be excluded, and not in cases like this, where without signs of mastoiditis venous thrombosis and pyæmia certainly existed, and better explained the fever than mastoid abscess could. From what we, at present, know of this disease, there will proba-

bly always be anomalous cases that will baffle diagnosis, and can only be determined by post-mortem examination. And cases like the one reported can not be operated upon, unless we establish the arbitrary rule to perforate the mastoid in all cases where middle ear disease exists, together with fever, either high or low, or any cerebral symptoms of a threatening character, regardless of their nature, no matter what other conditions may be present that fully explain their existence.

Dr. Chisolm, of Baltimore, said, as to mastoid trouble, he feels assured that inflammation of the cells exists much more frequently than is generally believed. Those who have occasion to examine sections of the temporal bone are aware of the great variations in the size of the communication from the drum cavity into the dural cavity of the mastoid. When we remember that the membrane lining each is a continuation of the other, we can easily explain why the discharge is often so abundant, owing to the extensive mucous surface. Should the opening be small, as we sometimes find it to be, its closure through swelling of the soft tissues may incarcerate pus and bring about mastoid abscess. As to instrumental interference, in many cases the indications are clear and demand immediate action. In other cases the symptoms are so illy defined that prudent surgeons abstain from making experimental mastoid openings. I have operated on some patients where I thought the indications were clearly defined and yet found no pus. In one such an autopsy exhibited a general phlebitis of all the venous sinuses, but no pus. In another case where we would have opened the mastoid but found the patient too low to undergo the operation, a large blister covering the back of the neck, and one-half drachm doses of the tincture of the muriate of iron, suggested the doing of something for the dying man, brought about such good results as to eventuate in time in perfect restoration. He has seen cases of profuse discharge of long continuance, sequel of acute aural catarrh, with cerebral symptoms coming on in the course of the disease, irregular walk, beside severe pain over the mastoid region, get well without mastoid section. Such cases would also get well, no doubt, with the section, to which much good would be attributed undeservedly, as the sequel has shown. The difficulty in diagnosing the cases that should be operated upon is the more conspicuous the larger our experience, and I find myself shrinking from doing needless work, even when it is not accompanied with much danger in the operative manual. Not to be too hasty in adopting the heroic treatment is a good surgical quality.

Dr. Knapp:—Dr. Greene spoke of the quantity of pus being so large that it could not originate in the tympanic cavity alone, and pointed to the presence of an abscess. I think that the mucous membrane of the tympanic cavity with the adjacent air cells are sufficient to secrete large quantities of pus, just as we see it in the conjunctiva.

The so-called post-aural abscess is, the more I am acquainted with it, regarded to originate in a suppuration of the middle ear, mostly of the attic. The fistula may be difficult to detect, but the more carefully I seek for it the more frequently I find it, sometimes distant from, for instance, as far as an inch above the insertion of the auricle.

The difficulty in the management of middle ear and mastoid inflammation lies in the diagnosis more than in the treatment. Different symptoms, pain, temperature, lack or presence of discharge, presence or absence of external signs are of value, but none of them in itself is pathgonomonic. We require the appreciation of all the symptoms, in their combination, to arrive at a diagnosis in which there may be one symptom prevalently to guide us in the localization of the lesion and in our action. This we ought to keep in mind also during the progress of an operation. The operation of the mastoid does not involve so great a danger as craniotomy, but I think, with Dr. Frothingham, neither of them ought to be done on a possibility, but on a probability, and in brain surgery only on a probability approaching certainty.

Dr. Burnett said he was in entire accord with Dr. Knapp in what he had said regarding mastoid symptoms and treatment. He would add, however, that in his opinion, no one should open the mastoid in chronic mastoid disease, or in any case where cerebral symptoms had shown themselves, without being prepared to go further and open the cranial cavity. Regarding peroxide of hydrogen, Dr. Burnett would say that he has observed denuded bone on the promontory heal and the membrana tympani close under the use of peroxide of hydrogen instilled into the cavity.

Regarding acute mastoid disease following acute otitis media, he would say that he has never seen a case demanding opening the mastoid, unless the local treatment of the ear after the opening in the membrana had been made, or had occurred spontaneously. After the membrana is opened nothing should be thrown into the drum cavity for fear of irritation and possible mastoid complications. The mere presence of pus in a previously healthy mastoid cavity, in acute otitis media is not sufficient reason for opening the mastoid unless the mastoid symptoms are very severe and increasing, having been present a week. There should be no haste to open the mastoid as resolution of the intra-mastoid congestion will surely take place without such operation.

Dr. Seiss thinks much of discussion bears more upon cerebral surgery than upon aurist's work. Regards blistering the mastoid, when used in connection with proper treatment through the external canal and Eustachian tube, of very great value.

TREATMENT OF OPACITIES OF THE MEMBRANA TYMPANI, ACCOMPANIED WITH DEAFNESS.

Read in the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY FRANCIS DOWLING, M.D.,
OF CINCINNATI, O.

A distinguished writer on ear diseases says that between the ages of 20 and 40 nearly every third person has some difficulty of the hearing with one ear at least. Although this statement may be somewhat exaggerated, still we know from our everyday experience in practice that there is a very large number of people along towards middle life who no longer hear well with one ear at least, and that, while during the years from 20 to 40, the number who are completely deaf is comparatively few, still the number whose hearing power is below normal is very great.

If we examine these cases carefully, we will find that a fairly large percentage of them present ears with no evidence of disease. In a still larger number, however, the drum-head of one and often of both ears, present conditions of opacity either circumscribed or general, with more or less thickening of the membrane.

These opacities, when present, are usually the result of an antecedent inflammation of the external meatus, or a catarrh of the cavity of the tympanum, or senile changes in advanced age. When, in consequence of the inflammation either external or internal, exudation takes place into the substantia propria of the drum-head, the opacities thus formed are permanent and cannot be removed by any species of medication.

About two years ago I instituted a series of experiments in the treatment of these opacities of the drum-head with a view to clearing them up and restoring the drum-head to a fair degree of usefulness, and thus getting an improved condition of the hearing. The treatment consisted mainly in penciling the drum-head and the adjoining parts of the external meatus with various medicated solutions.

Altogether, something like a dozen different remedies were used, in solutions of water, glycerine, olive oil and albolene. The applications were made from once a day to twice a week, and were continued from one to eight months in each case.

I obtained better results from an oily solution of phosphorus and strychnia in different strengths than from any of the other remedies tried.

The remedy, I think, does good by directly stimulating the membrana tympani, thus increasing its nutritive activity, which in these opacities is usu-

ally below par, and thus getting rid of the opacities by absorption of the exuded or deposited material giving rise to them.

I found the influence of the remedy particularly well marked in cases of opacities arising from catarrh of the cavity of the tympanum caused by attacks of la grippe during the late epidemic of that disease. In some of these cases the improvement in the hearing was very great.

In the opacities in elderly people as a result of senile changes the remedy sometimes did a great deal of good, and then again, there was no apparent improvement, even after months of patient treatment. In about 10 per cent. of these cases I succeeded in improving the hearing by the use of this remedy. These elderly people are often very thankful even for a slight improvement in their hearing, and are willing to spend a goodly share of time and money in furthering any treatment that will secure this end.

In cases which present a parchment-looking general opacity with abnormal thickening of the membrane, applications of this remedy or any others of its kind will, in my opinion, do no good. In cases of this nature attended with great loss of hearing power, the only remedy that promises any permanent relief in improving the deafness is a total excision of the drum-head. Making an opening in the membrane by any of the methods that have as yet been proposed does good only for a time, as the opening, by whatever method it may be made, is sure to close up in a comparatively short time, when the deafness again returns.

Probably one of the most ingenious of the appliances that have been devised for keeping the opening from closing is Politzer's eyelet, but even this does not always work well in practice. To begin with, it is a very difficult and tedious thing to get it in place, and then after one has succeeded in doing this the contrivance is readily displaced, during a fit of coughing, sneezing, etc., falling either outwards into the external meatus, or still worse, inwards into the cavity of the tympanum.

I wish to submit here a few cases taken at random from my note book:

Case 1.—Mr. N., aged 40, was treated in January, 1887, for an acute inflammation of the external meatus of the left ear, which he stated was the result of a strong ear injection which he used to cleanse his ear of wax. The disease terminated in recovery. In December, 1891, he came to me, complaining of loss of hearing and a feeling as if a foreign body was in the ear. On examination the drum-head presented a uniform opaque color. The outlines of the malleus and incus could not be distinguished. The watch could be heard at 6 inches from the ear—the right ear had been deaf from childhood. The drum-head and cartilaginous portion of meatus externa was penciled with a solution of 1 gr. to the oz., every second day for a month, and twice a week for two months longer. At the end of this time the hearing power had increased so that the watch was heard at 14 inches.

Case 2.—This was the case of an old man aged 76, who came to me October 6, 1890, complaining of great difficulty of hearing, and was very sensitive about his condition. He had tried everything that had been recommended to him; had tried quack doctors and regulars without getting relief. On examination I found both drum-heads studded with opacities of a calcareous deposit. In the right ear there was a crescentic-shaped patch that occupied half the surface of the membrane. The watch could be faintly heard on both sides when placed in immediate contact with the ears. There was no history of disease of the middle or external ear. I applied a 1-gr. solution in this case, but soon increased it to 2 grs. The treatment was kept up until January, 1891, when there was an increase in the hearing distance of 3 inches by the watch for the right ear and 5 inches for the left ear.

Case 3.—Miss W. has complained of difficulty of hearing for over a year. Had a gathering in her right ear years ago, during an attack of measles. Examination reveals quite a large perforation of the drum-head of the right ear, which probably dates from the attack of measles. She hears a watch at 10 inches with the right ear. The left drum-head is intact, but considerably thickened; the watch is heard at 3½ inches with this ear. This case was under treatment from July 20, 1890, until January, 1891, when the hearing distance had increased to 12 inches with the left ear, the one treated.

Case 4.—Mrs. G., aged 52. In this case the deafness dates from the birth of her last child, now aged 16. Both ears are affected. The hearing distance for the right ear is 28 inches, that for the left ear only 6 inches. Both ear-drums are opaque. A 4-gr. solution was used in this case, but the strength of the solution was reduced to 2 grs. to the oz. on her complaining of a disagreeable feeling in her ears on account of the treatment. The case was treated about a year, marked improvement in the hearing.

Case 5.—This is the case of a young woman aged 25, who came to me in November, 1890, complaining of difficulty of hearing in the left ear. There was a marked general opacity of the drum-head of the affected side; the other was about normal in appearance. Here there was a history of catarrh of the middle ear. I treated the case about two months and gained some improvement, but at the end of this time the patient got tired of the treatment and I lost sight of her.

Case 6.—Mr. S. came to me in the fore part of January of this year, and is still under treatment. He is 60 years of age, and has had difficulty of hearing since he was 40 years of age. Here I used a 4-gr. solution. He could not hear the watch even when placed in contact with the right ear when he came to consult me; now he hears at 1 inch, and at 4 inches with the left ear. The opacities in this case are undoubtedly the result of senile changes.

Discussion.

Dr. Seiss thinks the paper of Dr. Dowling very valuable; has used iodine ointment (10 per cent. in lanolin), with very good results in many cases of aural sclerosis.

Dr. Dowling, in closing the discussion, said: A distinguished professor of surgery in a German university used to say to us that when we got into practice the big operations would fill our heads, but the small ones our pockets. You will all subscribe to this as a truism. The big operations, especially on the ear, do not come to us every day, but a large number of cases do come to us claiming treatment for opacities of the drum-head accompanied by more or less deafness. The patients are doleful in appearance and equally doleful in spirits. They implore us to do something for their failing hearing. Often they get no encouragement from the physician.

The results of my experience in the treatment of these cases I have given you to-day in a terse form in my short paper. I hope others of the gentlemen present will give the remedy a faithful trial and report the results of their treatment at the next meeting of the Association.

In answer to the questions that have been asked I would say that the remedy ought to be increased from 1 up to 5 grs. to the oz. according to the degree and standing of the opacities of the membrane of the drum-head. Furthermore the treatment ought to be kept up for months, and the patients should be told at the start that they need expect very little improvement in their deafness under two or three months' treatment. If the larger doses cause undue stimulation of the membrane with a sense of fulness in the ears, the dose should be reduced, as it is apt to produce a certain amount of giddiness. This occurred in two cases which I treated, but vanished on reducing the dose.

PERFORATION OF THE INTESTINE BY A SPOON.—Dr. Libotsky reports the case of a woman in the eighth month of pregnancy who was suddenly seized with the symptoms of acute peritonitis. She died in a few hours, and at the autopsy it was found that the duodenum had been perforated by a silver teaspoon, and the spoon itself was found lying in the peritoneal cavity. It was ascertained, on inquiry, that the woman, while suffering from post-influenzal mania two years before, had swallowed the spoon with suicidal intent. *Centralblatt für Gynäkologie.*

PEROXIDE OF HYDROGEN AND ITS USE IN EAR DISEASES.

Read in the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY WALTER B. JOHNSON, M.D.,
OF PATERSON, N. J.,
SURGEON TO THE PATERSON EYE AND EAR INFIRMARY.

Peroxide of hydrogen, H_2O_2, as it is popularly called, is chemically and correctly the dioxide of hydrogen. It was discovered accidentally in the year 1818 by a French chemist, M. Thenard, but was little used either in manufacturing or in the arts until within the last decade. Pure anhydrous peroxide of hydrogen is a liquid of syrupy consistence, colorless, having an acid reaction, yielding four hundred and seventy-five times its own volume of oxygen on decomposition. The compound is very unstable, constantly on the slightest exposure undergoing decomposition and breaking up into its component parts nascent oxygen and water.

Bizett reports that the pure solution, anhydrous, readily destroys living tissues. Marchand writes "whatever will be the concentration of the peroxide of hydrogen, as long as it is made by the process which I employ in manufacturing the medicinal H_2O_2 it is always a harmless remedy, but it is unnecessary to make it more than fifteen volumes for medical purposes."

Peroxide of hydrogen (medicinal) is a three and one-fifth per cent. solution of the dioxide in pure water, from which all irritating or injurious properties have been removed; it yields about fifteen times its own volume of oxygen and is commonly called a fifteen volume solution.

In consequence of the instability of the compound, and to prevent its decomposition, the medicinal solution is slightly acidulated by the addition of minute quantities of hydrochloric and phosphoric acid.

It is slightly acid in reaction, colorless, almost tasteless and odorless, and will if tightly corked and not exposed to light, or a temperature higher than sixty or seventy degrees Fahrenheit, retain its properties for an indefinite period. It may be used in full strength, or if apparently irritating to the patient, it may be reduced to a one per cent. or stronger solution by the addition of distilled or carefully boiled water. It should be applied by glass or hard rubber applicators or sprays, as irritating and dangerous chemical combinations occur as a result of its contact with some metallic substances.

No solution should be used unless it is thoroughly reliable, fresh and free from injurious impurities; the ordinary commercial article is of no value for medicinal purposes, being irritating in its effect and unsatisfactory in the results obtained, in addition to holding in suspension poisonous chemicals.

A chemically pure fifteen volume solution is entirely harmless either for internal or external use, and in this possesses a decided advantage over any of the other drugs used for similar purposes, which approach it in efficacy as a destroyer of pus, bacteria or germs.

The solution, if in perfect condition, upon its application to any diseased surface of the skin or mucous membrane, immediately undergoes decomposition, the nascent oxygen which closely resembles ozone in its chemical effects, is thrown off and enters into affinity with the pus, bacteria or germs present, the pus is destroyed and the albuminoid matters of the secretion are coagulated, the germs and bacteria are annihilated. The nascent oxygen, which is the valuable constituent for cleansing, disinfecting and destroying germs, is in consequence of its instability rapidly converted into oxygen during the reaction. The chemical action of the solution if fresh occurs immediately upon its application and causes the formation of large quantities of white or yellowish colored froth.

The peroxide solution is much more active than any of the other remedies used for the destruction of microbes; the following table, which has been arranged after exhaustive experimentation, by Charles Marchand, the chemist, who manufactures the medicinal solution which is in most general use by medical men, is intended to illustrate the comparative efficacy of various chemicals, in the destruction of the microbes present in half a gram of diphtheritic membrane. The peroxide of hydrogen is claimed by this table to possess qualities as a destroyer of microbes not approached by any non-poisonous drug, and exceeding in efficacy most of the poisonous germicides.

The mixture or solution used contains like the peroxide solution three and one fifth per cent. of the active constituent.

QUANTITY OF THE MIXTURE OR SOLUTION REQUIRED TO ANNIHILATE MICROBES.

	CUBIC CENTIMETRES.
Glycozone (harmless)	0 75
Biniodide of mercury	1 00
Biniodide of silver	1 33
Marchand's peroxide of hydrogen, medicinal (harmless)	2 00
Bichloride of mercury	3 00
Nitrate of silver	5 00
Hypochlorite of lime	9 00
Chlorine gas (aqueous solution)	10 00
Iodine	10 00
Bromine	24 00
Iodoform (when fresh)	28 00
Salicylic acid	40 00
Muriatic acid	100 00
Carbolic acid	128 00
Permanganate of potash	140 00
Chlorate of potash	158 00
Alum	180 00
Tannin	190 00
Common salt	196 00
Sulphide of calcium	201 00
Boracic acid	300 00
Sulphurous acid	325 00
Lactic acid	360 00
Chloride of iron	371 00

The pus or blood corpuscles which come in contact with the hydrogen solution are immediately destroyed by the chemical action; it is not necessary to remove the resulting froth; it should be allowed to remain even when other applications are to be used, as it forms a protective for the exposed tissues and does not interfere in any way with the effect of any other desired medication. Glycozone, which it is claimed possesses qualities as a destroyer of germs greater than the peroxide of hydrogen itself, is recommended for use in the subsequent treatment of diseases, in conjunction with it. Glycozone is a preparation of chemically pure glycerine saturated with fifteen times its own volume of ozone under pressure; it is quite different from the peroxide of hydrogen medicinal, and does not part with any of its ozone upon application to diseased tissues; it is intended for use in place of the many astringent or healing applications so much in vogue. It, as well as any application which the physician desires, may be used after

the peroxide has been applied with better effect than if the wound was cleaned by ordinary methods, but no application should be made until the pus, etc., is entirely destroyed by the hydrogen solution

The effect of peroxide of hydrogen upon suppurative diseases of the ear has been frequently demonstrated. The full strength fifteen volume solution may be used in nearly every case; infrequently it will cause a moderate amount of pain, in which case the strength of the solution should be reduced by the addition of pure water.

The solution should be applied by syringing, dropping it, or carrying it into the ear on a cotton swab; the immediate effect is the production of a white or yellowish brown froth which will continue to form as long as there is any purulent or albuminoid matter for the drug to act upon. When no more gaseous emanations are present the ear will be found free from pus and perfectly clean.

The peroxide solution, it is claimed, has many advantages over any of the other germicides for cleaning deep cavities; its susceptibility to use in any quantity without danger of toxic effect; that the pathogenic bacteria of any species are totally and rapidly destroyed; the ability not only to destroy the products of decomposition and fermentation, but by the quality of effervescence during decomposition to carry forward and without the wound all such products, which it would be difficult to reach with ordinary solution by syringing or injection.

Any remedy may be used in the treatment of the disease subsequently to the application of the solution, the effect of the application itself being simply to render the parts perfectly aseptic and place them in a favorable condition to assist nature's reproductive process.

The application should be made every day, or at least every second day by the physician in charge of the case; the patient should be directed to drop five drops of the solution in the ear three times each day after thoroughly wiping out as much pus as can be easily removed; the glycozone or some of the other applications in general use should be applied immediately after the ear is thoroughly cleaned. In catarrhal otitis it is claimed that in addition to a specific effect on the catarrhal condition the peroxide of hydrogen medicinal has proved of great use in soothing the mucous membrane and rarefying the air in the middle ear, the Politzer bag being used to inflate the tympanic cavity immediately after the application, thus forcing the solution into the middle ear in an effervescing condition.

The peroxide solution may be used advantageously in the treatment of mastoid disease after an incision has been made. The action of the remedy upon bone denuded of its periosteum, and even upon carious or necrotic bone, is unique; it causes a disintegration of the molecular particles and they are gradually subdivided and carried away in the frothy product of the chemical action, until a healthy surface appears upon which the solution seems to have only a beneficial effect. The action of the solution upon dead bone can be readily demonstrated by placing a small portion of necrotic bone in it; the bone will in a short time begin to disintegrate and continue to do so until it is entirely divided into very minute particles.

In some of the cases of mastoiditis treated, in which the denuded surface was very extensive, in from three to six weeks the bone would be in a perfectly healthy condition, the discharge of pus controlled, and the subsequent closing of the wound, when allowed, occurred rapidly and was perfectly satisfactory.

In one of the cases, in which for three years any attempt to allow the closing of the sinuses would be followed by an exacerbation of the inflammation, the carious condition was relieved and the opening allowed to close after two months of treatment.

The treatment is very simple and consists in syringing through the opening and into the meatus with a small glass syringe a sufficient quantity of the fifteen volume solution, at each sitting, to render the pus thoroughly aseptic, then packing the ear and the wound lightly with strips of sheet lint or gauze thoroughly soaked in the same solution, great care being taken to allow the wound to close, although the packing must not be so introduced that it will prevent the free exit of any pus which may be formed during the interval between the dressings. The external incision should be made ample and if the packing does not prevent the opening from closing during the progress of the treatment it must be reopened with the knife. Glycozone has been suggested for use in keeping the wound open, being used instead of the peroxide in the dressing.

The result of this line of treatment which has been followed in a considerable number of mastoid cases, has indicated the possibility of a degree of conservatism in the treatment of mastoid disease which is very desirable.

All the cases treated have done well, no deaths have occurred and in no case was it considered necessary to scrape the bone or to remove any portion of it, while the period of time necessary for the wound to assume a sufficiently healthy condition to render it advisable to permit it to close, did not seem longer than the time which must ordinarily elapse after the operation for thoroughly scraping the mastoid, and was much shorter than the time required before the wound produced in chiseling the mastoid could possibly be allowed to close.

Special care should be taken to keep all the applicators or sprays, used either with the peroxide of hydrogen solution or glycozone, perfectly clean, especially in case of mixtures of glycerine and peroxide which should be made fresh every second or third day to prevent the possible formation of formic acid; only silver, hard rubber, glass or porcelain should be used for measuring purposes.

If care is taken to properly keep the solutions, they are perfectly harmless and calculated to be of inestimable benefit to all who use them.

NASO-PHARYNGEAL LESIONS DUE TO CENTRAL VASO-MOTOR CAUSES.

Read in the Section of Laryngology and Otology, at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY RALPH W. SEISS, M.D.,
OF PHILADELPHIA, PA.

It has long been known by laryngologists that various lesions of the naso-pharynx are essentially nervous diseases, dependent on central causes, but the literature of the subject is not extensive, nor do any very definite conclusions appear to have been expressed.

The naso-pharyngeal diseases which I will consider as being due mainly to cerebral causes, are certain forms of "nervous coryza," including some types of obstructive enlargement of the turbinated tissues; recurrent engorgement of the lateral pharyngeal walls not dependent on inflammatory causes; and various forms of pharyngeal and lingual varix, especially of the base of the tongue. All of these diseased conditions may be classed among the *angio-neuroses*, and appear to be due either to some mal-condition of the vaso-motor centre in the medulla oblongata, or to truly cerebral conditions.

"Nervous coryza" in its various phases, all of which more or less resemble attacks of typical hay fever, has an extensive literature, and has been studied in much detail. That the seizures may be due to purely mental factors, such as anxiety, fright or anger, is, however, not very often noted, though of frequent occurrence. Some of the most typical cases I have seen have followed nervous breakdowns from excessive brain work or worry, and all have occurred in so-called neurotic individuals with irritable hearts and tired-out nervous systems. The relations of the conditions named to "rhinitis sympathetica" was pointed out by J. N. Mackenzie, in 1885, and has since been noted by many rhinologists. The association of the nasal condition with very marked *general* vaso-motor neuroses in all cases has not, however, been brought into much prominence. Almost invariably patients with "nervous coryza" complain of troublesome cardiac action, profuse perspiration on slight exertion, sensations of numbness, etc., in the limbs, cold extremities, headache and "nervousness."

The results of inspection are only conclusive when considered along with the general history; a constant condition, however, is *intermittent* distention of the vascular sinuses, generally very marked, and the swelling being accompanied by but slight superficial changes or inflammatory redness.

Passive congestion of the vascular areas about the palatine arches has been recognized frequently to be a pathological condition not caused by any of the usual factors of inflammatory states, and the resulting discomfort as most difficult to relieve by local treatment. Angio-neuroses of the pharynx may occur in cases of rhinitis sympathetica, or of lingual varix, or may be found alone. The attack may come on suddenly, following physical or more especially, mental overexertion or emotional excitement, or the condition may persist and become chronic. The symptoms are local "throat-fretting," as I have called the various sensations described by patients, particularly a feeling of local fatigue and weakness, and in some cases, a burning sensation quite unlike that of any form of inflammatory sore throat. Constitutionally the patient presents the usual characters of nerve weakness and low blood-vessel tone, and is usually decidedly emotional and neurotic. The appearances on inspection are those of great vascular relaxation, and large, varicose vessels may traverse the half arches; the ordinary lesions of chronic pharyngitis may also be present in varying degree. The conditions are very transient, and may subside in a few hours, or may persist without intermission, although great variability is characteristic of the disease.

Varix of the lingual tonsil and epiglottis has been written upon by many observers, and its occurrence with general vaso-motor neurosis noted; but its association with grave *central* lesions has not been emphasized, though Dickson regards it of diagnostic importance in brain and heart lesions. The clinical history of such cases is much the same as that of the other angio-neuroses mentioned, the whole vascular and nervous systems being usually much below par. The local symptoms may include marked paroxsymal dyspnœa, which, as in a case lately under my observation, may threaten life, and the hydra-headed sensations grouped under the name parœsthesia.

Examination with the laryngeal mirror shows the well known gorged, tortuous veins, blue or purple in color, radiating from the lingual tonsil over the base of the tongue, the lingual surface of the epiglottis, and the lateral pharyngeal walls. Advanced changes in the whole upper respiratory tract are also decidedly the rule in these cases.

The following brief history of cases illustrates the various types of angio-neuroses of the upper respiratory tract.

Case 1.—Mr. M., music teacher, 25 years of age; belongs to a neurotic family, but claims to have been well until lately. Has marked cardiac irritability, sleeplessness and much local discomfort in the throat and nose, coming on only when *fatigued*, and consisting of pain, hoarseness and dryness. Examination showed great vascularity of the lateral pharyngeal areas; a tortuous vein larger than a match stick traversing the posterior half arch of both sides. The lingual tonsil was enlarged, its vessels dilated, and the larynx somewhat hyperæmic. Treatment consisted of rest, strychnine and coca wine internally, and sedative sprays and pigments locally. Complete relief resulted, lasting for more than a year, but a relapse has lately occurred, and the patient is now absent in Europe.

Case 2.—Miss A., 31 years old. Has had thyroid goitre for 9 years, lately has had cardiac palpitation, tinnitus aurium and "risings" and discomfort in throat, and impairment of general health. The turbinated bodies at two subsequent daily visits showed complete contraction, as if cocainized, and equally complete stenosis of the nares from relaxation; this was repeatedly observed. The lingual fossa contained numerous varicose vessels pushing the epiglottis so far backward as to hinder laryngoscopy. Rest and tonics were ordered and systematic faradization begun, but the patient discontinued her visits as soon as slight relief occurred, and the ultimate result of treatment cannot be given.

Case 3.—Miss M., professional nurse, about 26 years of age. Has always been vigorous and healthy until last few months, having worked at her profession without holiday for four years. Now complains of numbness and other parœsthesias in limbs, heart pain and tachycardia, sore throat and cough of a short, irritative character. Examination showed an irritative rhinitis, of typical vaso-motor or "hay-fever" type, and engorgement of the lateral pharyngeal and lingual areas. Treatment consisted of a month's perfect rest in the country, bromides for sleeplessness, tonics, general faradization and sedative local applications. Complete relief resulted in about two months, and continued through a winter of very hard work, but ceaseless care with a dying cancer patient has recently brought about a perfectly typical relapse, with constant irritative cough and much pain over the cardiac region.

In addition to the more typical angio-neuroses of the upper respiratory tract, central nervous causes bear an important part in the etiology of diseases of the naso-larynx. It is a fact in the experience of the writer and his colleagues that, outside of syphilitic patients, worse cases of irritative rhino-laryngitis are seen in private practice and among the mentally and emotionally over-worked, than in dispensary service, and the writer has for years regarded the "catarrhal tendency" and "neurasthenia" as practically synonymous; especially is this shown in cases of naso-pharyngeal and aural sclerosis, such

patients almost invariably having very poor circulations and irritable cerebral centres. The association of pharyngeal varix with enlargement of the *thyroid gland*, as in the case cited above, is not at all rare in females, and was noted by Lennox Browne some years ago. Varicose veins in other regions of the body have also been frequently noted, and are "concomitant evidences of the dyscrasia."

The results of persistent vascular distention from central causes are, according to pathologists: 1. Increased *vulnerability* of the area affected, a slight irritant causing inflammation. 2. Hypertrophy of the tissues in some cases. 3. Fibroid changes or induration, followed by atrophy. Bearing these consequences in mind, the local changes in very many cases of throat and nose disease are logically explained. The great tendency of such patients to suffer from acute inflammatory attacks, the hypertrophic changes which occur, and the sclerotic and atrophic lesions which are characteristic of advanced catarrhal cases, are all accounted for. Accepting the fact that many cases of "catarrh" are due solely to disease of the vaso-motor centres, the total failure of local treatment in numerous instances is also satisfactorily explained.

Leaving the attractive study of the nerve paths by which neuro-paralytic or neurotonic hyperæmia is produced, the important subject of treatment demands attention. All laryngologists, who are also comparative pathologists, must have been struck by the great rarity of *chronic* rhino-laryngitis in the lower animals, many of which are subjected to the same conditions of environment as their catarrh tormented lords. The writer believes that the most important reason for this state of things is the non-neurotic and well-controlled vaso-motor centres of the lower mammals; blushing, Reynaud's disease, *non-inflammatory* varices are conditions yet to be reported, I believe, by veterinary pathologists. It is, therefore, evident that treatment should be largely devoted, in these cases, to the nervous system to secure the best results. The therapeutic measures of most value are well chosen climatic changes, rest, systematic outdoor exercise, regulated bathings, frictions, and massage. General faradization has a very happy effect in many cases, and is always employed by the writer, a weak current being generally used. Drugs are less satisfactory, but strychnine, perhaps best given by hypodermic injection, and the bromides frequently act well, and tonics are, of course, always indicated. Medicines acting directly on the vaso-motor system, as camphoric acid, atropine and digitalis, are sometimes indicated, and many cases will need the approved treatment of tachycardia in detail. Local treatment has at least a palliative action, and may also operate by transmitting favorable influences to the medulla, since it is well known that an irritation may thus be transmitted and reflected back upon the vaso-motor nerves. On the other hand badly chosen local therapeutics, acting as an irritant, is quite certain to operate injuriously on the vascular centres and increase the original disease. Especially may ill-timed operations, as the writer has again and again seen, act as nerve depressants and seriously exaggerate both the local disease and the general neurosis. It is my habit to treat cases of undoubted angio-neurosis with the utmost conservatism, using only the mildest applications and methods, and depending at least as much on hygienic and constitutional measures, as on local treatment. Energetic operative procedures are in a few instances, however, absolutely necessary, as shown by the following case:

Lawrence A., aged 13 years; a typically neurotic and emotional boy, suffering from nervous headaches, excessive sweating, enuresis nocturna and mental disturbances amounting almost to hallucinations. The nares were blocked from end to end with vascular enlargements, completely contractile under cocaine, and at rare intervals disappearing almost entirely of their own accord. Tonics, exercise and the strict routine of a large school brought about much improvement, but the occasional stenosis was so annoying that operative measures were advised. I used the galvano-cautery, chromic acid and the Jarvis snare, in turn, at intervals extending over a year, and finally secured a satisfactory breathing space, the amount of vascular tissue removed or tacked down on either side being certainly as large in bulk as the little finger, the capillaries seeming to dilate almost as fast as the paretic sinuses were removed. Although the final result has been fairly satisfactory, there is no doubt in my mind that each operation was *per se* an irritant to the vaso-motor centres, and to a degree added to the diseased condition. I should not have employed such energetic measures had the patient been an adult, or if general improvement had not first resulted.

Of special drugs locally useful in angio-neurotic cases, benzoate of sodium (10 to 20 grains per ounce of water), used as a spray, is specially sedative and valuable as a throat application. Menthol (10 to 30 grains per ounce of alcohol and glycerine) has also a most beneficial effect in the same class of cases, when used as a pigment applied directly to the areas of paræsthesia. The volatile oils of sassafras and cinnamon, menthol, thymol and camphor are valuable medicines in spray form for nasal applications; they may be variously combined, and used in either aqueous solution or dissolved in one of the bland petroleum oils. Any of the standard sprays or pigments may be indicated in a given case since the ordinary inflammatory lesions of the naso-pharynx may occur and require treatment in a typically "central" case, and it is especially important that the whole nasal-bronchial mucous membrane be put in as healthy condition as possible. Future observations will, doubtless, at an early date more clearly outline the etiology of pharyngeal neuroses and discover more rational methods of cure; but the writer cannot believe that these will consist of local destruction of tissue, or will be accomplished by a new cauterizing agent or an electric saw. At present scientific treatment would seem to include all measures recognized as general or local nerve tonics, and to rigorously debar all irritants, depressants and abnormal vaso-motor excitants; and in direct relation to the constitutional good effects of such treatment, will be the improvement in the local angio-neuroses.

Discussion.

Dr. Dowling, of Cincinnati, said:—I was very much interested in the able and very ingenious paper of Dr. Seiss, of Philadelphia. I am sorry I am not sufficiently well acquainted with the subject, to discuss it as intelligently as it has been presented. I think that the internal administration of strychnine and arsenic with extract of hyascyamin, does a great deal of good, owing to their sedative and tonic influences on the nerve centers. I have derived excellent results from this treatment in sympathetic affections of the mucous membrane of the eyes, caused by congestion of the nasal mucous membrane, owing to disease of that covering. In addition to this I would recommend salt water baths as an adjunct.

Dr. Price Brown remarked:—In the hyperæsthesia of nasal mucous membrane I have found, particularly in hay fever, that treating certain spots, particularly portions of inferior turbinate and a spot situated between the middle and infe-

rior turbinates anteriorly, also a spot almost opposite the last mentioned, as the septum, with galvano-cautery has been followed with best results.

Dr. Thrasher said that while in the main he perfectly agreed with the author, yet in some minor particulars he must differ. In cases of obstruction of naris he often found the deep antero-posterior cautery act well, binding down the bulging mucosa to the bony structures by cicatricial adhesive bands. The varicose lingual base he had rarely associated with neurotic diseases, and he would rather consider the connection accidental than causal. He thought that the lower animals had been not sufficiently well observed as it was quite well known that many monkeys, birds, etc., blushed or exhibited analogous phenomena.

Dr. Hubbard, of Toledo:—I want to add my testimony to the statement by Dr. Seiss that the use of astringents and galvano-cautery are, as a rule, to be avoided in cases of pure vaso-motor catarrhal conditions. His treatment as outlined is excellent, and I have supplemented it with a special apparatus for securing the effect of heat and cold within the nasal cavity. A small, soft rubber bag about the size of the small finger of a glove is slipped over the end of a soft catheter and secured by winding thread around the open end of the bag and catheter. There should be a small stop-cock or cut-off between the catheter and syringe. Insert this dilator gently (having first used a solution of menthol in al. vas.) and then inflate with hot and cold water alternately by means of the syringe. Allow each to remain in contact a minute or so. This method is not applicable where there is a bony obstruction to the canal except after operation. This is a very useful apparatus in epistaxis where the source of hæmorrhage is beyond the reach of the cautery, and it is a very proper substitute for the barbarous old-fashioned post-nasal plugging apparatus.

Dr. Seiss regards laryngeal and nasal disease as *the* cause of laryngismus stridulus, and local treatment as the first indication. Thinks cocaine injurious in all vaso-motor cases. Admitted the blushing of certain birds and monkeys, but spoke only of the ordinary domestic mammals. Thinks the local use of hot and cold, as mentioned by Dr. Hubbard, as very valuable.

TONSILLITIS AS AN INITIAL SYMPTOM OF ACUTE RHEUMATISM IN THE ADULT.

Read in the Section of Laryngology and Otology at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY JEFFERSON C. CROSSLAND, A.M., M.D.,
OF ZANESVILLE, OHIO.

In attempting to present this subject, I am actuated not especially by the novelty of the subject, which nevertheless I am compelled to believe is far less common than some writers would have us believe, but by the uniqueness of the case, the history of which is herein given, and a desire to direct attention to the two important subjects of diagnosis and treatment. It is well-known that tonsillitis not infrequently occurs during an attack of rheumatism, especially in persons of scrofulous and rheumatic diathesos; but it is only as an introductory symptom that it requires diagnostic skill, and becomes of importance in determining the character of treatment. I now wish to give the history of a succession of cases in the same individual. In giving the history of these attacks, I shall give it in the order in which the attacks occurred. I treated the patient in the last attack only. The history of former attacks was obtained from the patient. The patient is now thirty years of age. At the age of seventeen, he had an attack of non-suppurative tonsillitis. The duration of this attack of angina was about two weeks. It was immediately followed by acute articular rheumatism of two week's duration. At twenty years of age the patient had an attack of suppurative tonsillitis which lasted two weeks. Acute articular rheumatism again promptly followed the tonsillitis. This attack of rheumatism was very severe, protracted, and general. At twenty-nine years of age, the patient experienced a third and severe attack of suppurative tonsillitis which lasted four weeks. This attack of tonsillitis, as in previous instances, was followed by rheumatism which was severe, general and of five month's duration. At the age of thirty, and in February of this year, the patient had his fourth attack of suppurative tonsillitis which lasted about one week. This attack as usual with this patient, was followed by other symptoms of inflammatory rheumatism. This attack of rheumatism was pretty general, many of the joints being more or less affected. The duration of the attack, however, was comparatively short. The patient was confined to the bed one week, and to the house two weeks. There was not complete recovery, however, for several weeks, which I attribute to the patient resuming work too soon.

A few observations on this recurring series of diseases may be of interest. The individual is a strong young man. His occupation has been varied. At the time of his first attack, he was a laborer in a rolling mill. For the last year, he has been engaged in the insurance business, doing office work. He did not inherit a rheumatic or scrofulous diathesis. Neither did he inherit any predisposition to throat affections.

He cannot in any instance recall any exciting cause, such as exposure to cold and damp. He has never had tonsillitis without rheumatism following it. He has never had rheumatism without tonsillitis immediately preceding it. The tonsillitis has been suppurative in the last three attacks. The duration and severity of the attacks of rheumatism have been in proportion to the duration and severity of the attacks of tonsillitis. In no attack has there been any subjective symptoms of rheumatism prior to the subsidence of the tonsillitis. Neither were there any objective symptoms aside from those characteristic of the tonsillitis. In the first attack, there was a mild throat affection, and a light and short attack of rheumatism. In the succeeding two instances both the tonsillitis and rheumatism were severe and prolonged. In the last attack, both diseases were moderately severe but of brief duration. I desire now to call your attention to the case in a diagnostic and therapeutic point of view. Ability to recognize the exact character of the tonsillitis, is especially desirable, for it would impress the patient with the physician's keen and far-reaching insight into his disease and also afford him an opportunity to try abortive treatment. When called to treat the patient for tonsillitis, he asked me to give him also preventive treatment for rheumatism, saying that rheumatism would develop as soon as recovery from tonsillitis had been accomplished, and justified his prediction by his experience. The patient made the diagnosis and I had only to confirm it. The disease was of two or three days' standing, the patient having come from a neighboring town. There was a feeling of dulness and languor for two or three days preceding the attack. Patient's attention was next attracted by pain which accompanied the act of swallowing. Constitutional and local symptoms followed. Other points of differentiation were the more general, inflammation, hyperæsthesia and swelling of the peritonsillar tissues and structures of the neck, pain more diffused on the side on which the tonsil was inflamed, and the very rapid shifting of

the disease, and pain from one tonsil to the other. The acceleration of the pulse and the elevation of temperature, which ranged from 101° to 103°, were less marked than ordinarily obtains in idiopathic tonsillitis of equal severity. At this juncture, and before speaking of treatment, I will merely allude to the etiology of rheumatism without any attempt to discuss the various theories for it. Whether the causative agent is developed within the body or enters it from without in this, the germ era of medicine, with the history of the above and similar cases in mind, one can but feel a great deal of assurance in assuming that the causative agent is a germ or substance which enters the body through the crypts of the tonsils, lodging there and producing inflammation, or, if entering the body elsewhere or developing within, that the disease substance collects in or concentrates its force on the tonsillar tissues. With this view of etiology in the above case it would appear that proper local treatment would be fully as important as constitutional treatment. Therefore in the above case, I determined to abridge the course of the tonsillitis, hoping thereby to modify the course of the rheumatism. In what measure I succeeded may be fairly judged by the result already mentioned.

Treatment consisted mainly of free and repeated lancing of the tonsils with the use of warm water to promote bleeding. Anodyne and antiseptic sprays, prompt and complete evacuation of pus, which formed in one tonsil only, with saline cathartics and mild anti-rheumatic treatment. I learned from the patient that depletion had not been practiced in his former attacks and the abscesses were allowed to open spontaneously. We cannot wonder then at the prolonged and severe attacks of rheumatism that followed.

In view of foregoing facts I am compelled to believe that in cases of rheumatism in which parenchymatous tonsillitis is an antecedent symptom, the disease is at that stage largely local and affording exit for the disease germs and their morbid products by free depletion, and early evacuation of pus when there is suppuration will aid marvellously in abridging and mitigating the subsequent attack of rheumatism, if not entirely prevent it.

SOME CHARACTERISTICS DISPLAYED BY THE HUMAN MIND WHEN PLACED AT A DISADVANTAGE—A PSYCHOLOGICAL STUDY.

Read before the Section of Neurology and Medical Jurisprudence at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY T. L. WRIGHT, M.D.,
OF BELLEFONTAINE, OHIO.

When the traveller in the dusty and parched desert, views the mirage afar off, promising water to his burning lips, and the cool shade of green trees to his heated and weary frame, he hastens his pace, that he may the more speedily enjoy the refreshment and repose that seem to be almost within his grasp. But as he journeys onward, the pleasing vision recedes; it slowly fades—it disappears. Yet, how real, how true it seemed! Had some accident turned the beholder from his path, and he had failed to detect the illusion, his convictions would ever have remained true to the idea, that the phantom picture was a veritable reality. Indeed, thoughts and convictions, and conduct legitimately derived from a belief in the material certainty of the scene—though erroneous and possibly criminal—could by no fair rule be imputed to him as an agent truly responsible.

To illustrate the mystic snare in the meshes of which the mind may be entangled, and held prisoner—when no opportunity is presented to test and verify the *seeming*, by comparison with the substantial and *material*—the pretty fable of the imprisonment of Merlin, the necromancer, is quite in point.

The "Lady of the Lake"—called also the Fair Viviane—was enamored of Merlin, as indeed he also was of her. Casting about for some way by which she might detain him "for evermore," she persuaded him to impart to her, some of the secrets of his art. "At length it fell out, as they were going one day, hand in hand through a forest, they found a bush of white thorn. They seated themselves under the shade of this bush upon the grass, and Merlin fell asleep. Then the dame rose and made a ring with her wimple round the bush, and round Merlin, and began her enchantments, such as he himself had taught her; and nine times she made the ring, and nine times she made the enchantment, and then she went and sat down by him. And when he awoke, it seemed to him that he was enclosed in the strongest tower in the world, and laid upon a fair bed. Then he said to the dame, 'you have deceived me unless you abide with me, for no one hath power to unmake this tower but you alone.' And Merlin never went out of that tower where his mistress, Viviane, had enclosed him; but she entered and went out again as she listed."

In order to obtain his freedom, all that Merlin had to do was to make the effort and walk out of the seeming prison. But the illusion was so vivid and truth-like, that the mind was servilely submissive to the delusive yoke placed upon it. Thoughts, convictions and acts, based upon such a condition of hypnotic trance, could not, by any reasonable consideration, be held as proper subjects of accountability.

There are other sources of delusion, it is perhaps superfluous to say, besides the apparent freaks in nature's laws exterior to the physical organism, and besides the weakness and unsteadiness of the nervous energies within it.

Diseases within the brain not infrequently affect one or more of the senses in a manner analogous to the impressions received through normal avenues. The mind is ignorant of the source of sensations thus originating; and they are, as a rule, wrongly interpreted. Yet the will directs the personal conduct in a way that would accord with the healthful operations of the perceptive faculties. So convincing are morbid hallucinations, that the mind is prone to receive them as representatives of the material forces of surrounding nature; and its movements are most likely in a line with their false and delusive teachings. It is evident that responsibility, for acts growing directly from the impulses of hallucination, should not be esteemed as complete. Hallucinations, as well as epilepsy, and other nerve and mind disabilities, may come from traumatism, as well as from brain disease. Injuries, though distant from the great nerve centers (not to mention the presence of foreign bodies in the physical organism), may produce such morbid nervous impressions as will simulate disease of the brain itself.

It is moreover true, that while the nervous system

is in a morbidly receptive and impressible state, some very striking movement of the perceptive faculties may become aroused. A time may come when the system of nerves may again occupy a similar or identical position. In such an event, there is liable to occur a *suggestion*, which will bring to mind that same vivid perception that had been once before associated with the pending and peculiar nervous state. In this way, many strange and incongruous fancies may be generated. Dreams, somnambulism, trances—with their disconnected phantoms, their images awry and half fashioned, and their procession of ever changing shadows, and airy, though fearful nothings, have such birth as this. Here too, is total absence of sound sense and reason, although the will itself may be compelled to enter into the service of this farrago of nonsense. Under such conditions of misapprehension it is clear there is absence of moral and mental responsibility.

It is probable that few persons if any, are exempt from the trickery and deceit which are liable to be imposed upon the human mind by concealed agencies. The best poised and calmest intellects have, no doubt, their brief seasons of illusion, of hallucination, and of dangerous delusive beliefs. The deed is done. The irrevocable word is spoken. Whence comes the impulse of which it is the outcome? "I can give no reason. It is an impenetrable mystery to me!" This is the exclamation heard very often indeed, in that period of time called—"too late"—a period fully within the possibilities of every man living.

Let us now turn to another phase of our subject, and examine some of the characteristics of the human mind when placed at a disadvantage through the influence of toxic agents. We are at once struck with several particulars that have not appeared in our observations hitherto. We have been describing the senses when, to a considerable degree, they were deceived in their individual capacity. We are about to speak of the senses overwhelmed *en masse*. We have been noting defects that were mostly circumscribed in their range and application, that in fact, preserved to themselves some small quality of system and order. We are about to speak of mental confusion, incoherence, wreck. We have been treating of simple intellectual *incompleteness*, the causes of which have been mainly exterior to the bodily organism, and occurring without the complicity of the mind itself. We now proceed to examine the *total dissolution* of the mental and moral natures, brought on (as some declare) by the deliberate and wilful act of the victim himself.

In this work I will confine my thoughts to the alcoholic inebriate. I will speak of facts and principles in their general aspects, taking no account of the many exceptions and cavils that invariably beset comprehensive propositions.

In the family of man, there is a large number of individuals who live habitually under the control of a nervous system of exceeding and abnormal sensitiveness. Impressions are absolutely startling in their intensity; and the mind seems continually to be waiting in painful suspense, lest some new and unwelcome sensation should suddenly present itself. Perceptions, instead of leading to rational and practical knowledge, appear to palpitate throughout the whole mental and moral being, and arouse by an irrational but boundless sympathy, unexpected and undesirable associations. To the neurotic, the future is clothed very often, in impenetrable darkness, and is filled with possibilities of hopeless woe; and of these his fancy is incessantly seizing upon some, which he holds to his heart as realities.

In a very wide sense, feeling is living; and feeling, in the neurotic, is a pitiless and unceasing torture. A man finding himself in the midst of fire will jump out of it; and little will he reck which way he leaps, or what may be the consequences to himself or to others. Considerations as to that matter do not enter into his motives in avoiding the flames. Casuists may dispute as to the quality of will, involved in the case. Certain it is, that such an escape is not in obedience to free will, to will invested with the capacity of choice. It is merely an example of the instinct or impulse of self preservation, which is common to the nature of all animated beings.

In a manner analogous, when a mind is chafing under the oppression and tyranny of an universal nervous irritation, it will be compelled, sooner or later to seek some measure of relief; and that too, without much consideration as to the means it may be called upon to employ. It is wholly immaterial to one suffering in a prolonged nervous agony, whether, "being sane he knows the effects of alcohol on him, and therefore, he is responsible for them," or not. The legal apothegm does not cover all the material points involved. Like one in the midst of a sea of fire, the inebriate has became frantic for relief. He does not drink to create effects, he drinks to destroy effects. He knows that alcohol will afford rest from his consuming nervous inquietude; and he appeals to it as the one available instant refuge.

An immediate effect of alcohol upon the human body is the production of partial paralysis. While this appears to extend throughout the entire system, it also seems to vary somewhat in its intensity as it affects different portions of the organism. For the alcoholic impression as a whole, does not depress or hinder the bodily functions equally. Judging from the tumultuous but discordant movements that attend physical and mental activity while under the influence of alcohol, the inference is, that this incoherence results from irregularity in the power exerted by that agent, over the several departments of the corporal structure.

Alcohol is a speedy and reliable anæsthetic. By it, the morbid sensitiveness of the neurotic constitution is allayed. Sensation is blunted; perception is proportionally dulled, and they cease to worry and distress the mind and nerves. A welcome repose comes where but a little time before, there were doubts, fears and painful anticipations.

Another alluring element of rest to the perturbed mind of the neurotic, is the influence that anæsthesia exercises upon the faculty of attention. Everybody knows how tiresome it is to hold the attention firmly in a given direction, when the nervous system is in a state of prostration. When convalescing after serious illness, it is common to lose one's self in the midst of some brief narrative, and inquire with a sigh of fatigue—"where was I, what was I talking about?" The dullness of the perceptive faculties induced by anæsthesia, separates the mind in a notable degree, from the world surrounding it. The association between the material and immaterial is interrupted; and the mind like a ship without rudder or compass floats away on the shoreless sea of an uncurbed imagination.

This leads to the consideration of another one of the primary effects of alcohol upon the mind; and it is the immediate result of blunting the sensibilities and the perceptive faculties by means of anæsthesia. The authority of *attention* having been withdrawn from the world of thought and feeling, the mind wanders free and untrammeled. No longer occupied with the affairs of present and practical life, the imagination seizes upon the stores of memory, upon the suggestions of the organic processes within the body, and even upon the unsubstantial fancies of dreams and reveries past and gone. Of these it constructs phantoms and combinations and contrasts, absurd, brilliant, or trifling, as the case may happen. In truth, the inebriate mind is in a state very similar to the one occupied in trances, visions and somnambulism—of which, brief note has already been taken. The mind works subjectively—within itself exclusively. Illusions, hallucinations, and delusive beliefs, framed from the odds and ends, the *debris* of the past in thought and feeling, delight the roving and ethereal fancy.

And here a brief suggestion or two may be not unprofitable. The inconstant and elusive state of mind just described, is commonly attributed to the stimulating effects of alcohol.

(*a*) Alcohol appears to act as an excitant upon the heart and brain. This is, however, to some extent, deceptive. Alcohol is a poison; and when taken in considerable quantity, the whole organism is thrown into a tumult of action in the endeavor to rid itself of the dangerous intruder. The system is invariably prostrated when this work is done—showing that the extra work was at the expense of the system itself mainly, and not by the aid of allies or auxiliaries.

(*b*) The destruction of the sensibilities also operates as a pseudo-stimulant, by setting free, through anæsthesia, the body and mind, from irksome and laborious association with the material surroundings.

(*c*) Again, alcohol acts as a *quasi* stimulant by the seeming contradiction of its benumbing powers. In other words, alcohol paralyzes with peculiar emphasis, certain *restrictive*, or inhibitory nerve centers. It interferes with the monitors, the regulators of the imagination, and permits that faculty to roam without law or restraint.

These three primary or instant effects of alcohol, are they which prove so alluring to the inebriate. The neurotic partakes of alcohol with the object of obtaining the quickest and best relief from a great nervous agony or strain. The primary effects of alcohol fulfill the measure of this object perfectly. The point is to secure the instantaneous application of the first impressions made by the alcoholic agent. The motives actuating the inebriate, do not therefore reach to the secondary stages of drunkenness; nor, still less, to the last or tertiary stages.

In concluding what I have to say about the condition and responsibility of mind, when it is placed at disadvantage by alcohol, I will simply add this: There are certain lines that are common to alcoholic intoxication in all circumstances. But it is important to remember that psychologically, the mental and moral situations are radically different, in the several conditions of the inebriate constitution. In the primary stage of inebriety in a sound constitution, the imagination is vivid and bright (though erratic) and good fellowship reigns. In the secondary stage, the circulating fluid is filled with poisons other than alcoholic; the whole organism is in a quiver of anguish, while the mind is sullen, morose, hateful. In the third stage, when the brain, heart and glandular system have undergone profound physical degeneration, the mind is imbecile and degraded, but is comparatively harmless.

In conclusion, I will call attention to the fact, that intoxication is not the only bad outcome of the alcoholic influence; and also that it is not the result always the most to be deplored. Recent intoxication is supposed to be rather agreeable than otherwise. It excites the generous and sympathetic feelings. But when drunkenness is complicated by the presence, within the organism of subsidiary poisons contingent upon the prolonged use of alcohol, the spectacle is quite different. There are toxic principles in alcohol which are more destructive than those producing the state of simple inebriation. They are the fruitful sources of physical degenerations, both of the body at large and of the brain in particular, that are seldom the consequences of intoxication from opium, chloral, haschisch and other hypnotics. Indeed, alcohol is capable of producing all the degenerative injuries peculiar to the habitual inebriate without ever proceeding to the point of actual drunkenness. Dr. Maudsley expressly mentions "that more dangerous form of habitual indulgence in small quantities of wine and spirits throughout the day by which some active men of business endeavor to spur their overtaxed energies." To these poisonous properties of alcohol (which belong to few other intoxicants) the attention of the public should be directed. In that way only, can the true gravity of carelessly and ignorantly handling that most powerful but most pernicious agent, alcohol, become fully appreciated.

EUCALYPTOL IN DIPHTHERIA.

Read in the Section of Laryngology and Otology at the Forty-third Annual Meeting of the American Medical Association, held at Detroit, Mich., June, 1892.

BY MARION THRASHER, M.D.,
OF SAN FRANCISCO, CAL.

A diphtheria epidemic pervaded portions of San-Francisco during the winter months of 1891–92. It was most plentiful and virulent in that part of the city, where there was a stagnation of sewage. The writer was located in that quarter, and had ample opportunity for the practical study of this much dreaded disease.

Years ago California imported the Australian gum tree, the *eucalyptus globulus*, for shade, it being a tree of rapid growth. The inhabitants soon learned that it absorbed malaria and transformed unhealthy into healthy localities. The writer observed in the above epidemic, that diphtheria was rarely if ever found in houses surrounded by eucalyptus trees.

Eucalyptol is a powerful germicide, a disinfectant, a stomachic, a tonic, a stimulant and antiperiodic.

In small doses it produces mental activity, accelerates circulation and respiration, excites salivary secretion, promotes appetite, induces diaphoresis, and increases the elimination of urea.

It is expelled from the system through the mucous membrane of the fauces, trachea, bronchi, skin and kidneys. In short it possesses all of the characteristics that a remedy should possess to meet the require-

ments of the pathological conditions found in a typical case of diphtheria.

In diphtheritic inflammation the exudation being not only upon but within the mucous structure, the therapeutic action of eucalyptol, seems clearly indicated. The Löffler-Klebs bacillus fastens not only upon the surface but beneath it, and an agent to be effective must destroy it wherever found, and at the same time produce no injury to the healthy tissue in and upon which it abounds. Eucalyptol fills that requirement.

Its tonic and stomachic power overcomes anorexia and places the stomach in a condition to digest nutritious food, and fortify the system against the general depression of the vital organs so characteristic of this disease.

Blood-poisoning is early indicated in the saffron skin, which may be counteracted, if not overcome, by the administration internally of eucalyptol, bichloride of mercury and quinine. Cardiac weakness should be anticipated, by giving from the outset a generous diet of milk and eggs, supplemented hourly with brandy and digitalis.

Ventilation should be looked after, and everything in the sick chamber should be kept disinfected and scrupulously clean.

The writer uses a 10 per cent. solution of eucalyptol in pure alcohol, and applies the solution locally to the diphtheritic exudation, hourly day and night. In addition he gives it internally every hour with quinine, iron and bichloride. Dr. Forcheimer, of Cincinnati, in a very able article in the International Clinic, first called the writer's attention to eucalyptol in the treatment of throat affections.

The writer has abandoned the use of trypsin, papayotin, and peroxide of hydrogen, as membrane solvents.

The etiology and pathology of diphtheria, a malady so appropriately named "the enemy of childhood," was but little understood until recently. The ignorance of the medical practitioner was such, that every step he took only increased the gravity of the prognosis.

The erroneous idea, that the diphtheritic membrane was but a fungous growth upon the throat surface, only to be removed by cauterization, was followed by disastrous results.

No physician was dextrous enough to swab the throat, and touch only the diseased part, much less the inexperienced nurse, to whom the task was usually assigned.

This operation would be difficult enough, were the patient an adult, which was seldom the case, but when it was a crying, squirming, fighting child, is it to be wondered at, that the lunar caustic made dozens of blistering patches on the hitherto healthy tissue, on which the false membrane would further spread?

Need we be astonished that under such misconception of pathology and treatment the disease produced such an alarming mortality?

The fatality is greater among the children from three to five years of age for no other reason than from the fact it is so difficult, at this early age, to practically medicate the throat.

The writer has in a measure overcome the difficulty by forcibly compelling the child to swallow semihourly the eucalyptol solution, which passing over the diseased tissue accomplished what is affected in older children with the swab or gargle.

Unlike most other remedies, should it come in contact with the adjoining healthy mucous membrane, as it undoubtedly will, it will give tonicity to the parts and in addition render them antiseptic, thus preventing the spread of the exudation.

In conclusion, while the writer does not claim that eucalyptol is a specific for diphtheria, yet he believes its general use in the disease will show a decided diminution in its mortality.

TREATMENT OF ASIATIC CHOLERA

BY INTRA-AREOLAR INJECTION OF LARGE VOLUMES OF WARM SALINE SOLUTIONS, AND AN ABUNDANT USE OF HOT ACIDULATED WATER, TO THE EXCLUSION OF ALL OTHER DRINKS.

Read before the Kansas City Academy of Medicine, October 1, 1892.

BY SIMEON S. TODD, M.D.,

Emeritus Professor of Obstetrics and Diseases of Women in the Kansas City Medical College.

Those of you who are readers of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION may remember a publication of mine in that journal, No. 6, Vol. iii, 1884, entitled "A New Method of Treating Asiatic Cholera Proposed." This was followed two years later by a paper upon the same subject, read in the Section of Practical Medicine at the thirty-seventh annual meeting of the American Medical Association, and printed in the same journal in July, 1886.

The plan of treatment urged in these papers, to be brief, was to maintain the normal volume, blood-pressure and integrity of the blood, as far as possible, and to sustain cardiac and vascular activity during that period when, other measures having failed, the blood-vessels are being rapidly drained of their serum. This was to be done by copious injections into the areolar spaces of an artificial serum, to which might be added alcohol, spirits of ammonia or other stimulants. In aid of this, and for the purpose of dilution, to impart heat to the stomach, and thus stimulate functional activity in the neighboring viscera through the semilunar ganglia and solar plexus; for its germicidal or other antidotal effect in the alimentary canal, for its local astringent effect and, incidentally, to allay thirst, I proposed the use as a drink of large quantities of water, hot as may be borne, pleasantly acidulated with sulphuric acid—the draught to be repeated instantly and as often as rejected, and even forced upon unwilling patients. Ice, and cold drinks of every kind, were to be absolutely and wholly interdicted. These were the two leading features of a line of practice that at the time of my first publication I believed to be wholly new, and these means I then believed and now believe to be most valuable auxiliaries to any plan of treatment that may be adopted.

That the plan of treatment proposed by me was not wholly new I learned after the publication of my first paper, since it now appears from documents in my possession that as early as 1866 Dr. Cantani, of Venice, recommended "subcutaneous injections of *saline solutions*," and in the same year Dr. Beigel (*Lancet*, ii, pp. 352, 353) gives a case treated with hypodermic injections of warm water. The paper of Dr. Beigel was the report of a case of "complete collapse," in which hypodermic injections of "warm water to the extent in all, at first, of 7 ozs., were made into the calves, thighs and arms." As some benefit seemed to follow the measure, Dr. Beigel

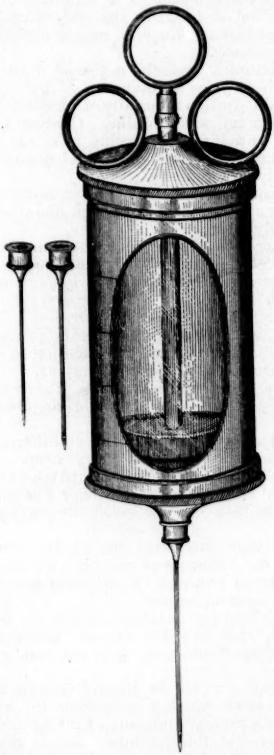
made two further attempts, but the patient finally succumbed. I need hardly say that not only was the quality of the fluid defective, as it was devoid of the saline constituents of the blood, but the quantity of fluid injected in this case was too small to be of much service at any time, and absolutely useless in a case of "complete collapse." Dr. Cantani, as I did later, proposed to flood the circulatory system with saline solutions—"*injezioni sottocutanee di grandi quantita d'acqua salata tiepida.*" Again, in 1873, Prof. S. Samuel, of Königsberg, Prussia, published a paper on "Subcutaneous Infusion as a Method of Treating Cholera," in which he says that during an invasion of 1866 he "repeatedly injected substances into the calves and epigastrium." He does not name the "substances" injected, but the inference is that drugs and the hypodermic syringe were used. His treatment, like that of Beigel, seems to have been without purpose, almost, and without value.

I did not expect to feel called upon to say anything further by way of introducing the proposed plan of treatment unless the disease should revisit this country. It is now lurking about our seashore, and no doubt with the return of warm weather will find its way to the interior by some one or more of the many avenues of entrance. Attempts at exclusion will fail, but measures of isolation and cleanliness, and personal prophylaxis, will limit the spread of the disease, lessen the number of those attacked and lower the death-rate, but will not hinder the epidemic from strewing its path with desolation and death, as former visitations abundantly show, if we are to rely solely on these safeguards and on former methods of treatment. For these reasons, and believing that the simple and rational suggestions of Cantani have not received ample trial, and that my own views as set forth in the two papers referred to, though gaining favorable comment in this country as well as abroad, have not received the attention they deserve, I am again impelled to affirm my continued and increased confidence in the proposed method of treatment, and again urge most earnestly the feasibility and reasonableness of these auxiliaries,and insist that they be given an early, hearty, vigorous and persistent trial in aid of whatever other means may be adopted.

One thing must not be forgotten if we would account for failure in the use of drugs. The pharynx, the œsophagus, the stomach and the intestines constitute the great route by which the poison of cholera enters the system. These organs are the first to feel the impact of the disease, and are chief among the sufferers. The changes in these structures begin early, and many times progress with wonderful rapidity—a rapidity proportioned to the quantity of poison finding entrance, perhaps, rather than the quality of the infecting matter, for we must suppose the *quality* of the morbific agent to be constant. The most deadly poison known, animal, vegetable or mineral, is absolutely harmless when greatly diluted.

What are the post-mortem findings? The venous side of the circulation is found in a state of intense engorgement, the vessels of the arterial system being comparatively empty. This engorgement of the veins is especially marked in the abdominal cavity, those which unite to form the portal vein and the portal vein itself being filled with dark, viscid blood. The urinary tract also suffers, but it is in the alimentary canal where the most destructive changes are wrought. The entire lining membrane is in a state of maceration. The pharynx, the œsophagus, the stomach, and small intestines especially, will be found denuded of patches of epithelium, and their villi exposed, or covered with mucus and partly detached fragments of epithelium.

These lessons from the dead-room show the danger of delay, and the utter futility of giving, by the stomach or rectum, drugs or fluids of any kind with the hope of having them absorbed, except in an early stage of the disease, or where but a small quantity of the poison has been taken into the stomach. Med-



icines by the stomach and rectum are alike rejected, or remaining, are not absorbed. As a consequence the discovery of hypodermic medication was hailed with much satisfaction as the epidemic of 1865–1866 made its approach, and the use of drugs by the hypodermic method and with the hypodermic syringe was everywhere resorted to, but with indifferent success, it must be said, except in mild cases and at an early stage of the disease, for the relief of pain. One obstacle stood in the way of success—the waste of the fluid part of the blood, with its salts, and the gradual clogging of the blood-vessels with the more solid parts of the blood, leading at the last to cessa-

tion of heart action for the want of the stimulus of repletion. All who have had experience with the disease will remember to have noted the wonderful outpouring of serum from the stomach, the bowels and the skin, as the disease approaches the algide stage.

The significance of these blood changes was early and duly appreciated, and when the visitation of 1831–1832 came about, some method of preserving fluidity of the blood had long been reckoned a desideratum. The practice of transfusion of blood had come into vogue, and from the transfusion of blood in a case of hæmorrhage to the transfusion of an artificial serum was a short step. From the year 1832, to and including the year 1873, sixty-eight papers on the subject of intravenous injections of saline solutions had been published, as shown by the laborious researches of Dr. John S. Billings, Asst. Surgeon U. S. A., in his report on the bibliography of cholera made in 1875 under the direction of the Surgeon-General of the Army, and published by Act of Congress. Of these thirty-seven, or more than one-half, were published as early as 1832. Many of these papers were reports of cases treated by this method. Some startling results were had in the hands of clever operators, even in cases of profound collapse, but the skill needed to make the injection with safety is such that the method will hardly ever meet with public favor. So cautious, indeed, were the physicians of our own country, and so doubtful of success, it may be, that two or three trials of the method only had been reported in the United States down to and including the epidemic of 1873.

Following on the heels of intravenous injection and the ushering in of hypodermic medication, the idea of intra-areolar injection of large quantities of an artificial serum was an easy and natural conception, and thus it was that in 1866 Cantani published his monograph on subcutaneous injections of warm saline water. The plan received little or no attention at the hands of the profession. He had no followers, strange as it may seem, save in the aimless and faltering manner of Dr. Beigel, and the suggestions of Dr. Cantani passed from memory. Down to the date of my first paper, in 1884, nothing further was heard of subcutaneous injection of warm saline solutions in great quantities for the purpose of replacing the wasted serum.

Here therapeutic measures rested at the time of my first publication. During the last epidemic, 1873, the means commonly employed hardly differed in the least from the means employed in 1832. Opiates, astringents, stimulants and the various acids were used in mild cases, and in the earliest stage of the disease in all cases. As the stage of collapse approached the quantity of stimulants by the stomach was increased, only to be rejected. Hypodermic injections of morphia, with alcohol or ammonia in some of its forms, friction, hot baths and other hot surroundings were resorted to with persistent purpose, but the feebleness of despair. During all of this period, with amazing incongruity, the patient was freely given ice and iced drinks to allay the implacable retchings and insatiate thirst. Intravenous injection of an artificial serum, the only measure that had given promise of success in collapse, was in the hands of the few—not used once perhaps in every one thousand cases. Subcutaneous injection with the purpose of replenishing the depleted blood-vessels seems never to have received a thought.

The universal and fatal error committed in allowing ice and iced drinks finds no rational explanation but in an apparent sense of hopelessness on the part of physicians and nurses, and the promptings of a humane desire to please the patient to the end. These things, so grateful to the patient, are craved in a most piteous manner, difficult to withstand, but certainly nothing can be conceived of in the way of drink more irrational or more deadly. And yet, in all of the voluminous cholera literature of the last sixty years, there has not come to us an authoritative remonstrance against the practice—not even a hint that the stomach, and that great nerve center in its neighborhood, the semilunar ganglia and solar plexus, need to be warmed into physiological activity with hot drinks rather than chilled into utter inaction with ice.

Then again, let it be remembered that from 1814 down to the present time, during the intervening epidemics and covering a vast field of observation, the prophylactic and therapeutic value of the acids, and especially the sulphuric acid, had again and again been demonstrated beyond question, and yet it has never once been authoritatively suggested, from the date mentioned down to the present time, that copious draughts of hot water pleasantly acidulated with sulphuric acid should wholly supplant the use of ice and cold drinks. That it should be necessary to press upon the attention of the profession so earnestly the measure of introducing into the areolar tissues large volumes of artificial serum at a time when the absorbents are still active, and at a yet earlier period warm the rapidly cooling stomach with hot acidulated water—means so simple, so available and so rational, is a matter of no little wonder. So simple and self-suggestive are these means that it may happen that I shall be met with a denial of their novelty, but the facts are as indisputable as they are remarkable.

It must be noted that in all cases of much severity that concurrent with the destructive changes taking place in the alimentary canal, the vaso-motor nerves of the parts supplied by the solar plexus and the abdominal branch of the right pneumogastric suffer a paresis. From the open mouths of the capillaries are poured forth torrents of serum. The current is toward the mucous surface of the stomach and intestines, and as before stated, there can be no absorption from the alimentary canal when this outpouring has been set up. If then there has been failure to arrest the disease at an earlier period with the use of dilute sulphuric acid, opiates and stimulating astringents, and vomiting and purging continue, with thirst, the stomach and entire alimentary canal, if possible, should be flooded with draughts of water pleasantly acidulated with dilute sulphuric acid, and as hot as can be borne. These draughts are to be given *nolens volens*, as often as every five or ten minutes if rejected, but less frequently if retained. At the first appearance of coldness of the hands and feet, if the vomiting and purging continue, in conjunction with the hot drinks injections must begin, while yet the circulation is little impaired and the absorbents are active. Large volumes of saline water of the temperature of 100° F. are to be thrown slowly into the loose areolar tissues at all available points *of the trunk* from a syringe of large size. The needle should be inserted at many points on each occasion, if the

quantity of fluid needed be considerable; a matter to be determined in each case by the condition of the subject and the amount of serum being lost. If done early, from one to four quarts of fluid I am sure may thus be thrown into the blood channels, if needed, within the space of an hour, and must be repeated again and again as occasion may demand. Dr. T. Weatherill (*Lancet*, 1832, ii, pp. 688–689) related a case in which 480 ozs.—3¾ gallons—were injected into the *veins* with success. To this artificial serum may be added alcohol, carbonate of ammonia or other adjuvant.

When my first paper appeared it called forth some comment from the medical press, and some objections were raised. No one thought the practice would prove hazardous, but some objected under the belief that a quantity of fluid sufficient to serve any valuable purpose would not be absorbed—an objection without validity except when the measure is resorted to in unfavorable conditions, as in complete collapse, when absorption would be slow indeed, and perhaps wholly suspended. A more weighty objection is found in the possibility that no artificial serum can supply the physiological place of the lost serum of the blood. Even this objection, however, loses much of its force when we remember the readiness with which the organism conforms to new conditions, as seen in the transfusion of blood, but in a more marked manner in the successful transfusion of so incongruous a fluid as milk.

After a somewhat critical examination of the subject I am prepared to suggest the following as a good, if not the best, formula for the injection fluid: ℞. Sodii chlor., 3jss; sodii sulph., 3jss; potass. chlor., grs. viii; sodii phosp., grs. v; sodii carb., grs. xxxij; alcoholis, f3iij; aq. dest. q. s. ad., f3xxxij. This is a modification of the fluid used in intravenous medication and known as Little's solution, of which, however, the sodium sulphate is not a constituent. A convenient form for ready use would be a strong, filtered solution, preserved in well-stoppered two-oz. bottles, each containing enough to make one quart of the injection fluid when added to a sufficiency of recently distilled water. A very neat, nicely adjusted and close-fitting four-oz. syringe, with three needles, has been made for me, according to instruction and design, by George Tiemann & Co., 107 Park Row, New York, of whom it may be had. The instrument should be thoroughly rinsed in a 5 per cent. solution of carbolic acid before and after using.

Now this paper, since it is to be published in THE JOTRNAL OF THE AMERICAN MEDICAL ASSOCIATION, will have wide circulation, and in order that it may fulfil its mission, and the method of treatment suggested on trial be rated fully at its merits, a word more must be said respecting the manner of its execution. A disease that carries off its victims in twenty-four hours, and sometimes in four or five, cannot wait for the slow-coming feet of the slothful, nor the hesitating hand of the unready. Its management requires generalship. The physician must have power to command himself, and command unquestioning obedience on the part of others. Milder measures having failed, the treatment here enjoined must be followed with unflinching purpose and be rigidly enforced on all who are about the patient. Do not despair of saving your patient, but press your efforts even to the jaws of death. If in deep collapse from lack of early treatment, and the fluid be not absorbed from the cellular spaces, thrust the needle into the median basilic or median cephalic, or other accessible vein in the arm or leg, and practice intravenous injection. The operation will probably be quite as free from danger with my syringe made for intra-areolar injection as if done with a more elaborate appliance. It can be done in a few moments by a dexterous hand, and only requires that all air be expelled from the needle before inserting it, that the injection be made slowly, and that the syringe be not completely emptied. About one in every six of the cases tried have recovered from deep collapse under intravenous injection, if the reports are to be relied on.

Now it may be asked just here, what advantage the proposed plan of intra-areolar injection has over intravenous injection of saline solutions; and the answer is, that by the intra-areolar method the fluid is introduced at many points, distant from each other, and slowly and by a sort of filtration through many small and diverse channels, enters at last the ascending and descending venæ cavæ and reaches the heart in a gradual way. Owing to the means, too, by which the fluid reaches the large venous trunks, there is no danger of the entrance of air. The same things cannot be said of intravenous injection, for the fluid is thrown into a vessel of considerable size, and unless done with great caution, may endanger fatal engorgement of the heart if that organ happen to be nicely balancing between action and rest. It also endangers entrance of air and, what is by no means impossible, embolism, from the wounded vein. These considerations point out one other great advantage of the intra-areolar over the intravenous method. The first can be used with safety, even by the unskilful, who are many, but the other must be relegated to the skilful, who are few.

That the plan of treatment I advocate will greatly lessen the fatality of the disease I believe—that it may fall short of my expectations is possible. The most that can be said against it, perhaps, is that it is untried, and the same has been true of every successful remedy in medicine and every valuable appliance in surgery till their merit had been proved by trial.

It will be seen that I have omitted discussion of the cause, the mode of propagation, the symptoms and pathology, the prevention, and all details as to treatment, except so far only as has been necessary to illustrate the innovating methods herein set forth. It may not be amiss, however, if I give here a simple and palatable formula for the use of the well-known remedy, sulphuric acid, as a personal prophylactic for those who are being actually exposed to the danger of infection: ℞. Acid. sulph. dil., f3ij; spts. vin. gal., f3ij; syr. aurant. f3viij. M. Sig. A tablespoonful half an hour before, and two hours after each meal, in a half tumbler of water.

The supreme value of such prophylactic measures for those who are exposed, and the priceless advantage gained by interception of the virus on its way to the intestinal canal, and while yet in the stomach, must be borne in mind if we would discharge the duty our profession imposes. It may not be out of place if I say, in conclusion, that much of the contents of this paper is based on observations made during the prevalence of the epidemic of 1848–1849, and of 1866, in both of which the writer bore an active part.

PURULENT BRAIN DEPOSITS, AND PHLEBITIS AND THROMBOSIS OF THE CEREBRAL VEINS AND SINUSES FOLLOWING EAR DISEASE.

BY FRANK ALLPORT, M.D.,
OF MINNEAPOLIS, MINN.,
PROFESSOR OF CLINICAL OPHTHALMOLOGY AND OTOLOGY IN THE UNIVERSITY OF MINNESOTA, ETC.

(*Continued from page 502.*)

Case 27.—Archives of Otology, September, 1880.—Treated by J. Michael, of Hamburg. Left ear. Chronic otorrhœa. Years ago received a blow on left side of head; insensibility for a few hours followed; in a few days recovery occurred, with an occasional pain on the left side of the head. He has had a discharge from both ears, and been rather deaf for the last two years.

Nov. 10, 1877. Violent headaches, starting on left side. He has a feeling of pressure, feels stupid and has slight aphasia. He lies in bed with his head drawn somewhat downward into his neck; his face is red; pupils sluggish; constipation; no fever; aural polypi in both ears; removed; syringe; calomel and ice bags; no improvement.

Nov. 16. Spasms and unconsciousness. Stiff flexion of all four extremities. Then followed delirium, stupor, sensitive skin; pain upon moving back. Death.

Autopsy.—A yellowish projecting spot existed somewhat above the surface of the dura-mater, over the crista superior of the petrous bone. This corresponded to the site of the injury. The pia-mater at the convexity covered with pus. Abscess in left temporo-sphenoidal lobe. The ventricle was filled with pus. An opening existed outward from the corpus striatum, communicating with the abscess. Temporal lobe largely broken down with purulent degeneration. The frontal lobe œdematous and softened. The right lateral ventricle, as well as the third and fourth, was filled with a purulent fluid. The pia-mater at the base charged with pus. This extended down the vertebral canal. Both mastoid cavities were filled with pus.

Case 28.—Lancet, May 28, 1880. Treated by Henry Morris. Male, age 31. Left ear. Chronic otorrhœa, deafness, pain, red mastoid, chills, unconsciousness. Mastoid opened, temporary improvement, then pyæmia, herpes on face. Death.

Autopsy.—Thrombi in left lateral sinus and jugular vein.

Case 29.—Archives of Otology, September, 1880. Treated by Eugene Frankel. Female, age 23. Left ear. Chronic otorrhœa, acute exacerbation, meningitis. Death.

Autopsy.—Pus in tympanum; opening through drum-head; thrombo-phlebitis of transverse sinus; abscess in sub-dural space and in left temporal lobe; purulent lepto-meningitis of the base and the convexity.

Case 30.—Archives of Otology, September, 1880. Treated by Eugene Frankel. Male, age 22. Right ear. Chronic otorrhœa, appearance of cerebral symptoms after a knock on the head. Death.

Autopsy.—Pus in tympanum, no perforation of drum-head, incus gone. Caries of petrous bone, through roof of tympanum. Abscss in right temporal lobe, encapsulated. Thrombo-phlebitis of right transverse sinus.

Case 31.—Archives of Otology, September, 1880. Treated by Eugene Frankel. Female, age 28. Chronic otorrhœa. Right facial paralysis, vomiting, retained urine, dilated pupils, mastoid not opened; coma. Death.

Autopsy.—Pus in tympanum, perforation of drum-head. Caries of roof of tympanum and of ex. aud. meatus. An inspissated exudation compressed the facial nerve in the Fallopian canal. Purulent basilar meningitis; abscess in right temporal lobe, encapsulated. Mastoid sclerosed.

Case 32—Archives of Otology, September, 1880. Treated by Eugene Frankel. Male, age 53. Left ear. Chronic otorrhœa, polypus, removed, headaches, mastoid opened, meningitis. Death.

Autopsy.—Epithelioma of left ear, with destruction of most of the temporal bone. Purulent basilar meningitis.

Case 33.—Archives of Otology, September, 1880. Treated by Eugene Frankel. Female, age 3. Left ear. Pebble in left ex. meatus, attempt at removal, meningitis. Death.

Autopsy.—Drum-head gone. Pebble in middle ear, pus in middle ear. Purulent meningitis of the convexity.

Case 34.—American Journal of Otology, No. 3, 1879. Treated by J. Orne Greene. Otitis media, polypus, vomiting, pain, convulsions. Death.

Autopsy.—Carious destruction of vault of tympanum. Perforation of dura-mater near transverse sinus. Abscess of temporal lobe.

Case 35.—Lancet, 1878, vol. I, No. 20. Treated by G. C. Gribbon. Male, age 22. Right ear. Chronic otorrhœa, drum-head destroyed, violent headache, nausea, paresis of lower extremities. Death.

Autopsy—Abscess in right lobe of cerebellum. Caries of petrous bone at the internal auditory meatus. Pus in mastoid cells.

Case 36.—Archives fur Ohrenheilk., vol. xix, No. 4, page 245. Treated by K. Burkner. Male, age 36. Right ear. Chronic otorrhœa, pain in ear and head, deafness, diminution of discharge, convulsions, delirium, coma, œdematous swelling over superior boundary of mastoid muscle, a probe passes through posterior superior wall of external meatus, reaches carious cavity. Death.

Autopsy.—Necrosis in tympanum and external meatus. Dura-mater in region of temporal bone is injected, thickened and covered with pus.

Case 37.—Archives fur Ohrenheilk., vol. xix, No. 4. Treated by K. Burkner. Male, age 20. Left ear. Chronic otorrhœa (bilateral), sudden pain in left ear, cessation of discharge, chills, vomiting, vertigo, high fever, a thrombus felt in the left jugular, pain in neck, apathetic condition, left mastoid red and swollen, facial veins enlarged. Death.

Autopsy.—Thrombi in transverse sinus and in bulbous venæ jugularis. Red points and minute holes in the thin jugular fossa.

Case 38.—Archives fur Ohrenheilk., vol. xix, No 4. Treated by K. Burkner. Male, age 17. Left ear. Acute purulent otitis, left facial paralysis, granulations in middle ear, removed, improvement; some weeks later had sudden pain in ear. Discharge stopped, return of bad symptoms, contraction of left pupil, nystagmus of both eyes, somnolence, total deafness of left ear, paresis of left leg, paralysis of left abducens, pain in all branches of the trigeminus, vomiting. Death.

Autopsy.—Pus around chiasm. Anterior extremity

of left lobe of cerebellum is adherent to the posterior margin of the temporal bone. Abscess in left pons. At the superior border of the temporal bone, are three small carious openings, communicating with an irregular cavity, involving the entire posterior portion of the temporal bone. This cavity is filled with a greasy, shining, yellowish-white mass, which infiltrates the posterior wall of the temporal bone, just above the sigmoid sulcus, and is also connected with the vestibule. The ossicles are gone. Internal ear destroyed by gelatinous mass.

Case 39.—*American Journal of Otology*, April, 1881. Treated by E. G. Loring, of New York City. Male. Middle age. Right ear. In April, 1878, he consulted Loring with influenza, poor hearing, closure of Eustachian tubes. Recovered. December, 1878, had a similar attack. Recovered. December, 1879, had frequent similar occurrences. April, 1880, pain in ear and side of head, acute catarrhal otitis. Improvement. A few days later had severe pain again. Delirium, drum-head punctured, no pus. Death.

Autopsy.—Dura-mater intensely congested at the roof of the tympanum. Sero-purulent exudation in sub-arachnoid space. This exudation extends from the longitudinal fissure down upon the side of the brain. Pus in upper surface of right lobe of cerebellum. Pseudo-membrane in tympanum.

Case 40.—*Archives der Heilkunde*, vol. ii, page 295. Treated by H. Wendt. Male, age 49. Right ear. March 13, 1869, consulted Wendt. Tinnitus aurium, pain, deaf. March 30, unconsciousness, convulsions. Death.

Autopsy.—Basilar meningitis.

Case 41.—*Archives der Heilkunde*, vol, ii, page 295. Treated by H. Wendt. Male, age 52. Right ear. Caught cold, acute catarrhal otitis, perforation of drum-head, pain and tinnitus aurium. Found dead in bed.

Autopsy.—Diffuse meningitis.

Case 42.—*Archives der Heilkunde*, Vol. ii, p. 295. Treated by H. Wendt. Traumatic inflammation of middle ear; death.

Autopsy.—Basilar meningitis.

Case 43.—Service of E. de Rossi, of Rome. Female, age 57. Left ear. September, 1880, had malaria, went to the hospital. Three weeks afterwards had tinnitus aurium in the left ear, no pain. Acute otorrhœa. February 1881. Left side of neck swelled. March 2. Swelling incised and pus evacuated. March 3. Swelling increasing, painful to pressure, pus comes from meatus on pressure of swelling. Polypus in middle ear; middle ear is also connected by a sinus with the swelling. An attempt to open mastoid was made, but extreme sclerosis prevented. Chills; death.

Autopsy—Coagulated blood in left sinuses, localized meningitis, clot in jugular vein, caries of atlas and second vertebra, pus in cavum tympanum, occipital condyles carious, pus in mastoid cells. Carious opening in posterior walls of mastoid antrum, communicating freely with sigmoid sinus. Transverse sinus surrounded by pus.

Case 44.—Service of E. de Rossi, of Rome. Female, age 18. Right ear. Chronic otorrhœa. January 6. Pain in ear and side of head; fever. January 9. Came to the hospital. Deafness; tympanic granulations removed. Improvement. Headache, fever, exophthalmia, ptosis. Violent pain in head, painful swelling over mastoid muscles. Coma, death.

Autopsy—Dura mater adherent to the bone. Pus in subdural space, corresponding with the inferior side of the frontal and sphenoidal lobe and the anterior margin of the right hemisphere of the cerebellum. Pus covered the trigeminus and acoustic nerves. Dura mater at base of skull covered with pus; superior petrosal sinus, inferior cavernous sinus and transverse sinus filled with pus.

Caries was found in that part of the base of the skull which corresponded with the tegmen-tympani. Pus in tympanic cavity. The pus had burrowed laterally in the subdural space to the entire extent of the right lobes of the cerebrum and cerebellum. Several of the large veins which opened into the longitudinal sinus showed thrombi; thrombus in longitudinal sinus; abscess in the inferior posterior side of the frontal lobe.

Case 45.—King's College Hospital Reports. Treated by Urban Pritchard, of London. Male, age 23. Left ear. Chronic otorrhœa. Frontal headache, pain in left ear. April 1889. Caught cold; increased discharge and pain; several attacks of unconsciousness, with loss of speech. June 17. Convulsions; twitching of left side of face; semiconsciousness; fits. June 23, 1889. Came to hospital. Drowsy, incoherent. Tenderness on pressure, most marked about two inches above meatus. Slight facial paralysis. Operation June 23, 1889. Skull trephined at a spot about 2 inches above, and ½ inch in front of the meatus; no pus. Trephined again 1 inch behind the original opening. Pus found outside of dura mater. Trephined again over occipito-parietal region; no pus. The dura mater was at all times left intact. The whole wound was thoroughly irrigated and dressed antiseptically. Recovery. Occasionally has short attacks of aphasia.

Case 46.—King's College Hospital Reports. Treated by Urban Pritchard, of London. Male, age 26. Left ear. Chronic otorrhœa. Pain in the ear, and swelling of left side of neck. September 7, 1889. Intense pain in ear and side of head; chills; vomiting. September 11. Came to hospital. Intense pain in head, focussing in left temporal fossa; dizzy; polypus in middle ear. September 14. Temperature 101°. Delirium, vomiting, twitching of left eyebrow and angle of mouth. September 16. Retention of urine; semi-conscious. Operation. Trephined 1½ inch behind the meatus, and the same distance above the cerebral base line; pus evacuated, brain débris removed. Wound irrigated, drainage tube, antiseptic dressings. Improvement, delirium, chills. September 24. Wound re-explored, no pus; mastoid opened, no pus. September 26. Paralysis of right arm and leg. September 30. Optic neuritis, left eye. October 2, the track of the drainage tube was freely dilated; pus escaped. Slow recovery; still has chronic otorrhœa; has had two attacks of unconsciousness since discharge, and once some aphasia.

(To be continued.)

DR. J. COLLINS WARREN, of the Harvard Medical School, has accepted the executive presidency of the Section on Medical Pedagogies of the Pan American Medical Congress.

LUMBRICOIDAL OBSTRUCTION.—The *Doctors' Weekly* states that Dr. John Wyeth, of the Mount Sinai Hospital, New York, had a case of intestinal obstruction upon which he operated and removed a mass or entanglement of lumbricoids, eighteen in number; some of the worms were seven inches long. The patient did well after the operation and recovery is seemingly assured.

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:
PER ANNUM, IN ADVANCE $5.00
SINGLE COPIES . . . . . 10 CENTS.

Subscriptions may begin at any time and be sent to
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
NO. 68 WABASH AVE., CHICAGO, ILLINOIS.

All members of the Association should send their Annual Dues to the Treasurer, RICHARD J. DUNGLISON, M.D., Lock Box 1274, Philadelphia, Pa.

MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues and subscription for THE JOURNAL. Attendance as a delegate at an annual meeting of the Association is not necessary to obtain membership. On receipt of the above amount the weekly JOURNAL of the Association will be forwarded regularly.

SATURDAY, OCTOBER 29, 1892.

PROTECTIVE VACCINATION AGAINST CHOLERA.

It is generally admitted that the discovery of the cholera bacillus has given the profession a certainty in the diagnosis of sporadic cases of cholera, which we could not possess without it. Indeed, the importance of the search for the cholera bacillus is emphasized by the latest report by GUTTMANN from the Berlin cholera hospital, who proved by the detection of the specific germ, that apparently inoffensive cases of diarrhœa may really be mild attacks of genuine cholera. While it is evident that bacteriological advance has thus increased materially the efficacy of prophylactic measures, it cannot be claimed that it has as yet aided the therapeutics of cholera. Reports from various sources, however, indicate that the problem of protective vaccination against cholera is nearly solved.

The first efforts to immunize animals against infection with cholera bacilli, or against poisoning by their products, were reported by BRIEGER, KITASATO and WASSERMANN. Theoretical reasoning led these investigators to the experiment of growing various pathogenic bacteria in infusions of the thymus gland, or at least mixing pure cultures with this infusion, in the hope of reducing the bacterial toxicity. This expectation was realized, and such cultures, rendered less poisonous by the influence of the thymus extract, proved efficient protective vaccines against inoculation with the more virulent bacteria in tetanus, diphtheria, typhoid fever, erysipelas and cholera.

If a culture of cholera germs grown in thymus broth is heated to 65° C. for fifteen minutes, it becomes harmless to guinea pigs, but after twenty-four hours protects the animals against inoculation with twice the fatal amount of virulent bacilli.

Meanwhile researches with a similar object in view had been carried on by HAFFKINE in PASTEUR'S laboratory. This author found that he could modify the virulence of the cholera germs by special modes of culture. By growing them in broth at a temperature of 39° C. with steady aeration, he could diminish their toxicity to animals. On the other hand, by passing the virus through a series of guinea pigs by intra-peritoneal injection, the virulence was intensified. The former variety, introduced under the skin of animals or man, gave rise to localized swelling and œdema, and some febrile reaction. The intensified virus produced a more serious local reaction and even necrosis of the tissues, but *not if preceded by inoculation with the weaker virus six to eight days previously.* An animal that has passed through these two vaccinations is now proof against the ordinarily fatal injection into the peritoneal cavity. HANKIN describes in a recent number of the *British Medical Journal* the effects of such a vaccination on himself and others under the direction of HAFFKINE. There is, however, no direct proof as yet that these procedures protect man against the natural mode of cholera infection, although the analogy with observations on animals, as well as the tolerance to subsequent subcutaneous introduction of cholera virus, render this a probable presumption.

HAFFKINE'S method has been tested by the now famous journalist STANHOPE, who then exposed himself as cholera nurse without precautions in the Hamburg hospital, and even drank the suspected Elbe water. Yet such a sensational experiment cannot be of much scientific value. Since cholera does not attack every person exposed to it, his escape is not a decisive proof of the efficacy of the vaccination, while if the man had succumbed it would only have shown that the method is as yet not infallible.

A more definite proof that it is possible to render man refractory against cholera infection has been furnished by G. KLEMPERER, of Berlin. Two years ago BEHRING discovered that the serum of an animal artificially immunized against diphtheria could neutralize the toxic products of the diphtheria bacilli; virulent diphtheria cultures can thus be rendered harmless by mixture with a sufficient quantity of serum from an immunized animal. On the other hand the injection of such serum under the skin of a fresh animal protects the latter temporarily against a subsequent inoculation with diphtheria cultures. The anti-toxic effect of the serum depends on its quantity and upon the degree of immunity conferred upon the first animal. This discovery of BEHRING'S of the specific anti-toxic properties of the serum of immunized animals has since been found to apply also in many other bacterial diseases against which immunity can be obtained—as tetanus, pneumococcus poisoning, typhoid fever, erysipelas and some others KLEMPERER has ascertained that this is also the case in cholera.

He reasoned therefore that if a vaccination is to

protect against cholera it must give the serum of that individual the property of neutralizing the poisons produced by cholera germs. For this had been positively shown by his experiments on animals.

Since epidemiological experience has shown not all persons are apt to contract cholera he tested in the first place whether the blood of non-vaccinated persons ever possesses anti-toxic properties. In two instances out of five venesections he found that one to two centimetres of serum were sufficient to protect guinea pigs against cholera inoculation. His most important object viz.: to compare with this normal state of affairs the anti-toxic power of the blood of cholera-convalescents, he had not had opportunity to attain at the time of writing.

By inoculating a human being with cholera cultures heated to 70° C. for two hours by means of subcutaneous injections given eight successive times during 12 days, he obtained a high degree of immunity as manifested by the anti-toxic properties of the blood. A quarter of a cc. of this serum was a sufficient protection to guinea pigs. But the time and number of the injections required would deprive the method of its practical value.

By varying the method in very cautious trials on many students and colleagues, KLEMPERER finally learned that the living cholera bacilli so terrific in their power when introduced into the bowels, are relatively harmless when put under the skin of man. A severe but not dangerous local reaction and some fever follow the injection, but the bacilli are evidently killed by the organism. Within three days after the infection of .35 cc. of a liquid culture of cholera bacilli of full virulence a high degree of immunity was found established.

It is but justice to add that these results obtained by competent observers and by means of precise methods confirm on the whole the claims of FERRAN who alleges to have protected numerous persons by cholera vaccinations eight years ago. FERRAN's methods were not sufficiently precise, nor were they revealed to a sufficient extent to convince the profession of the reliability of his claims.

INEBRIETY AMONG WOMEN IN THIS COUNTRY.

The *British Medical Journal* gives a startling picture of the increase of inebriety among women in England, and also in other parts of the world. The number of women convicted of drunkenness in England and Wales, rose from 5,673 in 1878, to 9,451 in 1884. Last year 33,000 females were convicted of drunkenness in the United Kingdom. In London in one year the increase of convicted women was 500. In Glasgow 10,500 women were sent to prison. Of this number 450 were sent to jail from six to thirty-four times during the year. In Ireland the champion female inebriate record-breaker has been arrested over 700 times, and is yet less than 40 years old. One woman was sent to prison fifty-two times during twelve months. The proportion of women arrested was formerly seven men to one woman; now it is three men to one woman. The ages of these offenders range from 12 to 60.

These figures are so appalling as to be called a "*National shame*" by the daily press. Such persons do not come from the lower circles alone, but represent all classes and conditions of society. Twenty years ago women were not seen in the bar-rooms; now they are very common. The editor thinks that this increase of inebriety extends to all civilized countries in proportion. Unfortunately, we have no statistical studies of the number of women who come under police notice for inebriety. The partial records of a few large cities show a decline of inebriates among women, and these are among the lowest class of foreigners. Some authorities are confident that opium and other drug inebriates are increasing among women. There are probably many good reasons for this belief, especially among the middle and better classes of society. Such reasons are based on the individual observations of family physicians, and not on any statistics that can be gathered. Persons who have had large experience in institutions for inebriates, where they would naturally hear or be advised of such cases, are agreed that the number of alcoholic women among inebriates is very small comparatively; also that such cases merge more quickly into acute forms of delirium and melancholia, and disappear from the homes and the street. It may be safely asserted that the American woman cannot constitutionally use any form of alcohol as her foreign sisters use it. She has a more acute nervous organization, and the brain centers are more unstable; the surroundings are full of psychological factors that keep up a certain nerve tension, which antagonizes the sudden increased heart's action from alcohol. The brain suffers from the strain of alcohol, which gives no pleasure. The American women of all classes want rest, not increased excitement, hence they seek this more naturally in narcotics. There are other physiological reasons why alcohol is not used by women in America. From heredity and many other conditions, with surroundings and predisposing causes, inebriety will be found among women, but it will be of shorter duration in this country. It will be a symptom more than a disease; a symptom of brain and nerve failure, of rapid degeneration, that quickly takes on other forms. The American woman will never be a record-breaker for arrests for inebriety.

As a drug taker or an opium inebriate the same rapid fatality follows. As a periodical drinker, profound neuroses come on and the drink craze changes. The *British Medical Journal* urges very wisely, that

this "National folly" of arresting and sending to jail these poor victims, should cease. A new departure is demanded, and they should be recognized as diseased and sent to hospitals, under the care of physicians. A long residence in such a hospital would be an experiment that would be infinitely more humane, hygienic and economical, and fraught with the most important results to both the race and civilization. The practical point for our American physicians is to take up the subject of inebriety and study it as a purely medical topic, and not leave it to police courts and moralists to point out the evil and its remedies. The British public are alarmed at the extent of the evil, and cast about wildly for help. If the medical public had made this a scientific study, they would long ago have pointed out the means of prevention and cure.

The same thing is repeated here. The drink problem including both men and women, and the use of all narcotic drugs, are studied by moralists and non-experts, and the medical profession, to whom it rightly belongs, "pass it by on the other side." Both alcoholic and opium inebriety have already invaded our cities, neighborhoods, and even our homes, and the pledge, the prayer, the police court and punishment are the only remedies we can offer. Moral, religious and knavish quacks offer all sorts of specifics, but the evil goes on unchecked. The time is coming when the medical profession will teach the world the causes and remedies for this great and widespread evil of the century.

FIXATION OF THE SHOULDER IN THE TREATMENT OF DISLOCATION.

Surgeon-Major Hamilton, of the British Army, has made use of inelastic webbing to obtain fixity of the arm and shoulder. His method has been found effective in the dressing of a dislocation upward of the outer end of clavicle. According to the *American Practitioner and News*, July 30, the steps of the process of Mr. Hamilton are: first, the surgeon places a very large pad in the axilla of the affected side, and then passes around the arm of that side and so on around the body a piece of soft inelastic webbing about 1½ inch wide; this band is made to overlap 3 inches. The ends are held by stitching. Another piece of the same webbing is stitched at the back to the body-belt; brought firmly over the point of luxation, over which is placed a pad secured in place by stitching to the underside of the second strip; then made fast by sewing to the body-belt in front. In order to maintain downward traction, a perineal band is made to pass from the body-belt behind to a buckle attached to the same in front. The hand and forearm must be carried in a short sling. It is only necessary to unbuckle the perineal band when the patient goes to stool. Mr. Hamilton finds that this apparatus furnishes an absolute fixity of arm and shoulder.

NAVAL SURGEONS VOLUNTEERING FOR MILITARY HOSPITAL DUTY.

In the recent civil warfare in Venezuela some of our naval surgeons have done honorable and humane emergency service. After the skirmishes that took place near La Guayra a considerable number of revolutionists, though badly wounded, were without any surgical aid. Some of them lay for hours without even a primary dressing for their wounds. This state of affairs having come to the knowledge of the American (United States) naval officers, Medical Inspector Tyron, of the Chicago, went to the front and organized a hospital service at Macuto. He was assisted by two junior surgeons of the Chicago, and by the surgeons of Spanish, English and German ships in port. The men whom they went to serve had neither surgeons nor supplies.

Dr. Tyron and his staff were obliged to find their own instruments, bandages, appliances and medicines. One of the surgical staff of the Chicago, remained at the hospital every night. Some of the operations, such as resections at the hip and shoulder, required constant supervision; gangrene was not wanting in two or three cases to complicate the surgeon's duties. All honor to the Chicago's staff, and to their humane colleagues!

EDITORIAL NOTES.

King's College, London.—This institution, best known in this country by reason of being the field of Sir Joseph Lister's later labors, is also one of the centers of post-graduate instruction. It is there that the lectures and laboratory tuition of Professor Cruikshank are given in bacteriology. It was there that Sir Thomas Watson and Budd, Ferrier, George Johnson and Playfair have wrought and pursued their respective investigations beneficial to progressive medicine. A singular feature is noted in the London *Echo*, that while the institution is called a "college," it is worthy to be ranked as a University, and that although it bears the name of the King, it is the most democratic movement in London's educational enterprises. "The practical character of this democratic institution is its great glory." Nearly 600 students are now connected with this "Poor Man's University"—the evening classes at King's. That this has been a boon to the poorer part of London's great life is a fact impossible to exaggerate.

In Dr. Billings' National Medical Dictionary, one-third of the terms defined are Latin, being only 1,500 less than the English. We must also not fail to take into account the words derived from the Latin but incorporated into English and not credited to their Latin origin. "The practice of adding to the English vocabulary words adopted from the Latin and Greek is still carried on with activity, and there is little prospect of its ceasing. It is almost necessary as a means of denoting those new objects, ideas and relations, which are continually appearing and demanding expression. The resources of the English for the formation of new words from elements already existing in it are so limited that aid

from other languages is indispensable. The new terms which are required by the progress of science are almost wholly derived from these sources." ["Brief History of the English Language" prefixed to Noah Webster's Unabridged Dictionary, Ed. of 1884.] A few minutes devoted to Latin daily will lead to wonderful results if persevered in for a sufficient time.

TWENTY-FIVE CASES OF EXTIRPATION OF THE UTERUS FROM CANCER. A CONSIDERATION OF ULTIMATE RESULTS.—Dr. Charles A. L. Reed, of Cincinnati, presented to the recent meeting of the American Association of Obstetricians and Gynecologists, a report of twenty-five cases of complete vaginal extirpation of the womb for cancer with only two primary deaths—one from shock and one from iodoform poisoning. Of the twenty-five operated upon, but fourteen were of more than two years' standing, and hence were all that could be discussed with reference to their ultimate results. These fourteen were divisible into two classes of seven each, viz.: those in which the disease had existed for more than six months before the operation, and those in which it had existed for less than six months before the operation. Of the first class, *i. e.*, those of more than six months' (an average of 10 months) previous duration, all were dead; of the second class, *i. e.*, those of less than six months' (an average of 4 months) previous duration only one has since died. One of the recoveries is of more than five years' duration. The conclusion from these figures is that cases of cancer of the uterus ought to be remanded for operation as soon as diagnosed. Dr. Reed looks upon total extirpation as the only operation to be advised or practiced in these cases, the primary mortality from which, in experienced hands, varies from five to eight per cent.

TRANS-ATLANTIC FRAUDULENT PREPARATIONS.—The American drug-consumer appears not to have a monopoly of fraudulent pharmacals. Dr. Alfred Hill, the public chemist for the city of Birmingham, England, reports that six specimens of Seidlitz powders, sent to him for analysis, were found to be impure, and out of fifteen specimens of sal volatile six were below the standard.

A pharmacist of Londonderry was recently tried and fined for selling the tincture of iodine and compound benzoin tincture made with methylated spirit. The only defense that was attempted was that this kind of tincture was never dispensed except upon a prescription marked "for external use."

The *Pharmacie Centrale*, of Paris, has given warning that attempts have been made to market an adulterated iodoform gauze that contains not more than eight per cent. of iodoform, whereas it is represented to contain 30 per cent., the difference in color being made up by the addition of a certain amount of phenol.

THE TRUE PHYSICIAN.—Dr. T. Frazer Thomas, of Gainesville, Florida, is the author of the following sentiment touching the relations of the medical man to the lowlier members of his constituency: "The true physician will respect the feelings of the poor, both by the language and tone of voice in which he addresses them. He will remember that disease is his only passport to any house. He will act as a gentlemen to all, to the low, to the vile even, as well as the gentle and the rich. His duty is to heal, not to punish." Boerhaave said that "the poor were the best patients, for God is their paymaster." Because the physician receives no tangible recompense he must not forget his obligation to his patient nor his own self-respect.

In his intercourse with the world he must not be swayed by prejudice nor nationality. Friendship and good-will for all his patients are his polar stars, ever keeping in remembrance the priceless precept, "There is but one country—the earth; but one nation—the human race."

DOMESTIC CORRESPONDENCE.

PHILADELPHIA LETTER.

All danger of our having an epidemic of cholera being over for this year, quarantine vigilance has now relaxed, so as to detain only those vessels which have actually sickness on board or the cargoes of which consist of rags or other probably infected material. It is only justice to state that the escape of the community from the scourge is unquestionably due to the timely activity and unceasing exertions of our city and State health authorities. One of the measures calling for special mention is the employment of microscopical experts by the city authorities, so that in all cases in which bowel disorder aroused suspicion of cholera infection, bacteriological examinations and cultures were systematically made. The result was that in no instance was Koch's comma bacillus detected. Notwithstanding the proximity of vessels from infected ports which were lying in the river, it can be said that not a single case of cholera occurred in Philadelphia. This city is peculiarly fortunate in the fact that it is doubly protected by having the national quarantine at the Delaware Breakwater at the head of the bay, and by the State and City Lazaretto on Tinicum Island in the Delaware river near Chester. The situation for a time was grave enough however, and the air was filled with complaints of the interruption of commerce and detention of passengers, owing to a little clashing of authority between the city and State officials, just as occurred in New York between the local and National representatives. As a result an unexpected element of humor was introduced, for which we are indebted to the iconoclastic spirit of the Lazaretto physician, whose daily official communications to the city authorities were frequently couched in language more forcible than polite. He objected in vigorous terms to the "red tape and monkey business" of formal quarantine, and denounced "wind-mill legislation of health boards," which detained persons, "who had not cholera and had not been exposed to it," under conditions of great personal discomfort and in a place where they were certainly in danger of malarial poisoning. Finally the patience of the city board being exhausted, it resolved to return the last two communications of Dr. Herbst, and not to receive any more of his letters unless restricted to strictly official matters and language.

The indications are now pointing strongly in the way of a formal request being made to Governor Pattison to remove the Lazaretto physician, who, whatever may be his shortcomings in the way of respect for Health Boards, is not deficient in performance of duty, as a *persona non grata* and to replace him with one more in harmony with the city authorities. Among the vagaries of the late campaign might be mentioned the startling proposition of the City Health Officers, to quarantine this city against New York and to shut off all intercourse during an indefinite period during which cholera might be present to a greater or less extent in the latter city. The State Board of Health made an appeal for an appropriation to maintain some thirty-nine quarantine stations along the border of the State so as to prevent the importation of cholera. In order to make this in any way effective a standing army or cordon of sanitary police would be required to guard the border line, but even shot guns would not be successful in keeping out the infection unless all the water courses were also protected to their very sources. Moreover, land quarantine on any extended scale is a poor reliance at best because necessarily imperfect. The City Board of Health went to work with a will to avert the possibility of the epidemic gaining a foothold here. They paid especial attention to the sanitary

condition of the city and extra inspectors were appointed and sent out to make house-to-house examination for nuisances, which were promptly abated. City pumps were condemned and ordered closed. Printed leaflets was distributed by the police force to house holders, giving directions for removing garbage, using disinfectants and white-washing cellars and out-houses. City Councils appropriated $50,000 for the special work of preventing the epidemic, etc., etc. As before stated, the several health authorities may be complimented upon the fact that not a single case has yet appeared and that the city is at present in a superior sanitary condition. It is true that within the past two or three weeks there has been something of an outbreak of diphtheria, and the Health Board successfully petitioned Councils to have $10,000 of the special cholera fund, devoted to stamping out this disease which has been prevailing to a moderate degree, from seven to ten or more cases being reported daily. About 72 deaths have occurred from diphtheria during the last two weeks, but the Board of Health denies that it has assumed the proportions of an epidemic and by promptly quarantining infected houses, isolation of cases, and thorough disinfection, it is believed that the disease is now kept fully under control.

Among the special benefits conferred by the cholera scare may possibly be additional facilities for the quarantine station at the Lazaretto, at Big Tinicum Island in the Delaware river, by establishing upon a neighboring island (Little Tinicum) suitable barracks, administration and hospital buildings, wharf, disinfecting plant, etc., covering an area of some twenty acres. This would make a commodious and complete quarantine station fully abreast of modern requirements. These plans it is said have been approved by the Commission appointed at the meeting of the International Conference of State Boards of Health held recently at Indianapolis, the said Commission having been directed to visit and inspect all the quarantine stations of North America. The Mayor has made this the subject of a communication to Councils urging the adoption of the plan and also the immediate construction of the buildings, so as to be prepared for a possible invasion of cholera next year. Unless, after conference with the National quarantine authorities, it is decided to combine the two stations in some other location, it is likely that this suggestion will be followed, and that Councils will make the necessary appropriation. Another incidental advantage which might be named was the appointment by Governor Pattison of Dr. E. S. Shakespeare as Port Physician, who has officially made a special study of cholera, having been commissioned by President Cleveland to visit Europe and report upon cholera to the Government, which report has recently been issued.

"The Pennsylvania Society for the Prevention of Tuberculosis" has been formed and has commenced its crusade against this great modern scourge by educating the public by the publication of tracts for gratuitous distribution. The first one has just been issued; it is entitled "How to Avoid Contracting Tuberculosis." It contains much good advice, and is based upon the scientific demonstration of the contagious character of the disease, upon which, the members of the Society evidently believe it is impossible to lay too much stress, and they have very little to say about "predisposition" or "the pre-tubercular stage," which we used to hear so much about.

The Board of Commissioners of Public Charities of the State of Pennsylvania has just issued its twenty-second annual report, in a handsome octavo volume, covering its operations during the year 1891. The beneficent influence of this board can scarcely be estimated. Its work will perhaps be best shown by a few extracts from the last report.

During the year all the hospitals, alms-houses, and insane asylums in the State were visited, and the board reports that "in many of the hospitals, homes and almshouses, we were gratified to see that improved general government prevailed, and that many of the suggestions made by us in regard to the care and treatment of the inmates had been introduced by the managers and officers of the institutions.

"Most of the jails of the State have been visited during the past year. Those under the management of inspectors and wardens were found to be in good condition, and the laws for their government were generally enforced. Those under the care of the sheriffs, on the other hand, were, as usual, for the most part in bad condition. Indeed, they remained much the same as we found them years ago—schools of vice for the uninitiated young inmates who were there for their first offense. We believe that no improvement can be made in these prisons until they are placed under the control of inspectors, and are entirely removed from that of the sheriffs.

"Owing to a change made in the law regulating immigration, our duty, as United States Commissioners of Immigration, has ceased.

"We began the work on November 7, 1882. and from that time until August 31, 1891, when our services ended, 265,274 persons arrived at the Port of Philadelphia from foreign ports and were examined and inspected by our officers.

"In order to obtain reliable information as to whether any of the immigrants who landed at this port during the year ending June 30, 1891, and if so, how many, were admitted into any almshouse in Pennsylvania, an interrogatory circular, with blank, was sent to each institution, asking for an account of the number thus admitted. Returns were revieved from all the alms-houses of the State (seventy-two in number), and they showed that not one immigrant who had landed at this port during said year had been admitted to an almshouse to become a charge upon the public."

This is a strong argument, if any were needed, to defend the laws now in operation against pauper immigration.

The Lunacy Committee of the State Board of Public Charities has done good work in having insane paupers removed that were detained in almshouses or in private custody, wherever they did not receive proper care, and transferred to the State hospitals for the insane. The Committee has turned its attention to the insane prisoners; and the Eastern Penitentiary is now under fire for confining an alleged lunatic convict in a bed and otherwise maltreating him because the wardens thought that he was shamming. As a result it is hoped that provision will soon be made for the establishment of an institution for the treatment of the criminal insane and insane criminals for whom the ordinary facilities in our hospitals are inadequate and unsuitable.

The medical schools are all in operation for the winter course. Each one reports improved accommodations and increased classes, and claims that everything points to a prosperous year. At the Woman's Medical College there have been added a capacious quiz room, a new library and reading room, and a comfortable lunch room; the chemical, physiological, histological and pathological laboratories have been enlarged, and new outfits provided, including additional microscopes. The anatomical and operative surgery rooms have had their ventilation improved and electric lights have been introduced. The next years' class, in the fall of 1893, will inaugurate the obligatory four years' course at this college. The University of Pennsylvania has also lengthened its course beginning with the session of 1893—4; the fourth year, which at present is voluntary, will become obligatory. All the medical schools of Philadelphia now require entrance examinations, have graded courses, and

three years' attendance upon lectures, with annual examiations, and recommend a fourth year which at present is voluntary.

At the Polyclinic, Dr. John B. Roberts delivered the Introductory Address this year. He commented upon the success of this institution, and said that "the establishment of special colleges for practical work in medicine, adapted to the needs of practitioners, is an American idea. Great has been the success attending this effort to bring physicians into actual contact with patients in such manner that they may make practical study of disease under the direction of other physicians. The latter, while acting in a certain sense as teachers, are in reality only brother practitioners, similarly engaged in observing and studying nature's pathological processes. This community of interest and work makes our relation with those who come to the Philadelphia Polyclinic as pupil-physicians a very enjoyable one. The man, from a distant part of this country or from a foreign land, brings his experience and judgment to bear on the cases presented, and may aid much in unravelling knotty points that seem inexplicable to us, who have gained our experience here among different people and in dissimilar climatic surroundings. Thus it is that in my department the clinic hour sometimes becomes a sort of consultation in which I gain important hints.

"The benefit to be derived by the pupil is like that obtained by the boy in the manual training school or by the student in the laboratory. In fact, a polyclinic, where the classes are kept small, is what might be termed a 'clinical laboratory;' for in it the pupil-physicians handle broken limbs, tie arteries, chisel bones, make laryngeal applications, fit spectacles, and do themselves what, as students, they saw the professors do; sometimes indeed only by the use of an opera-glass.

"These manipulations must be done constantly by every man who wishes to be competent; for it is unfamiliarity that makes a workman timid, non-reliant and unsuccessful. The trained ear, eye, finger and hand are only obtained by the practice which takes away conscious effort. Many physicians of limited success and slender income owe their mediocrity to the absence of opportunity to become familiar with the many variations and phases of disease and injury.

"A doctor, to become experienced, must see and touch very many patients. This can only be done in a limited period of time by dispensary or hospital work in large cities; hence those who have no such opportunity because of residence, or other militating circumstances, must come to a post-graduate school, or else wait so many years for private practice to furnish enough cases that the experience, when gained, can only be enjoyed in old age.

"The Philadelphia Polyclinic is a clinical laboratory where the pupil uses his own brains and hands as in private practice; but here he sees in six weeks as much as, if not more than he would in the first six years of private practice. Another advantage is the direction to his observation and experience supplied by association with men who, as specialists, have given years to the study of a single department of medicine.

"It affords me pleasure to tell you that we can offer you better facilities than any of your predecessors have had here. Our surgical dispensary has outgrown its quarters, and the Trustees are about to make alterations to accommodate the increasingly large daily clinic. The number of gynecological and surgical operations is greater than ever, while the attendance of patients with eye, ear and throat difficulties offers unusual facilities for personal study. About 10,000 new cases per annum in the dispensary, and about 400 new cases admitted to the wards during the year, give the teachers a wide field for instruction. To this we add, as you know, many opportunities in the general and surgical hospitals of the city with which members of the medical staff are connected.

"The elaborate course of lectures to nurses in the Training School of the Polyclinic Hospital are open to the pupil physicians free of charge. By attendance on these, practitioners can gain many hints valuable to them in training nurses in their own localities."

The remainder of Dr. Roberts' address was devoted to "Diseases and Injuries of the Hip-joint," illustrated with diagrams and specimens.

The faculty of the Polyclinic has recently begun the publication of a medical journal filled with practical articles by the medical staff.

A patient was recently admitted who had attempted suicide by shooting himself in the ear. He spat, it is said, a portion of the bullet out of his mouth; the remainder was subsequently removed from his ear by Dr. Randall.

Dr. Roberts has recently tried infusion of salt solution into the veins of the arm, after shock from railroad crush. He recently ligated before the pupils the internal carotid artery, which was wounded in extirpation of a deep cervical tumor. The patient died subsequently with brain symptoms.

At the last meeting of the Philadelphia County Medical Society, Dr. Barton Cooke Hirst reported a case of symphyseotomy at the University Maternity Hospital, upon a young German woman with a kyphotic pelvis. The operation was readily done, and a live infant, a girl of normal development, was promptly delivered. The mother bore the operation well, and the infant's life was saved, which is a better result than could be obtained by craniotomy and not less good than Cæsarean section. It is believed that this case is the first in the United States in which symphyseotomy was performed as a substitute for the more grave Cæsarean operation, and its results warrant the hope that it may be found an efficient substitute for the latter, in appropriate cases.

At the suit of the Society for the Prevention of Cruelty to Animals, Dr. Wm. M. Zuill, a professor in the Veterinary Department of the University of Pennsylvania, was fined by a magistrate $20 for "docking" the tail of a carriage horse by request of the owner. It was in evidence that the horse was extremely sensitive, and that only about five inches of the tail was removed in order to keep the caudal appendage from injury by striking against the dash-board. This operation was not "docking," said the veterinarian. "Docking," he said, means the cutting off about a foot of the tail, leaving it the fashionable length, seven inches. A number of physicians from the Veterinary Department of the University of Pennsylvania testified that when such a small portion of the tail is removed the pain of the operation is but trifling, and in this case was not cruel, but necessary for the relief of the animal. The case will be taken to court on an appeal by Dr. Zuill.

The vacancy at the University of Pennsylvania caused by the death of Dr. Formad, who was demonstrator of morbid anatomy and lecturer on experimental pathology, has been filled by dividing the duties between Dr. Joseph McFarland, who has taken charge of pathological histology with urinology and bacteriology; while the teaching of morbid anatomy and the performance of autopsies has been awarded to Dr. Henry W. Cattell.

Prof. John J. Reese died on the 4th of September at Atlantic City, aged 74 years. As a lecturer and teacher of toxicology and writer upon medico-legal topics he was widely known. Personally he was highly esteemed and had a large circle of friends. He was graduated at the Art Department

of the University of Pennsylvania in 1836, and in 1839 from the Medical Department, receiving at the same time the degree of Master of Arts. He was President of the Medical Jurisprudence Society in 1866–67. In 1854, he was appointed professor of medical chemistry in the old Pennsylvania College, and served for five years. In 1865, he was elected to the chair of toxicology and medical jurisprudence in the University of Pennsylvania, which he still held at the time of his death. He was the author of several manuals, but his best known work is his text-book on medical jurisprudence and toxicology. He also edited the seventh American edition of Taylor's Medical Jurisprudence.

Women's Medical College of Baltimore.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

In commencing the instruction in Latin of the students of the Woman's Medical College of this city, I gave the following reasons why as medical students they should acquire a knowledge of that language. I am glad to say that all the students of the college except three or four, and they having previously studied it elsewhere, have joined the class.

1. Because though called a "dead" language, and although not now spoken by any nation, it is not really dead, but flourishes with a perennial and ever increasing vigor.

2. Because of its wide and far-reaching influence on the structure and development of the languages of all civilized nations, especially those of Southern Europe.

3. Because the resources of our language do not suffice for the constantly needed new supply of words, for which we are compelled to resort to the "classics."

4. Because we cannot dispense, if we would, with the Latin that has been incorporated into our own language.

5. Because science and medicine are full of Latin terms and others are being constantly added to our scientific vocabulary.

6. Because of the aid it affords to the study of science and medicine and to the knowledge of the source and meaning of words.

7. Because even an elementary and imperfect knowledge of Latin will afford great assistance in your medical studies.

8. Because the study of Latin disciplines the mind, promotes habits of thought and attention, elevates the sentiments, imparts a scholarly tone, and furnishes one with noble examples, grand ideas and a magnificent literature.

9. Because no translation affords an adequate conception of the great classical authors, and besides if it did scarcely anyone would ever read it. Thus those who do not study the language itself are virtually cut off from all its benefits.

10. Because a classical and literary training is the most important preparation for the medical career.

11. Because a very respectable knowledge of Latin can be acquired at very little cost of time and study, perseverance being the chief element of success in its acquisition.

12. Because its requirement is in the line of elevation of the medical standard, and consequently of the standing of the medical profession.

13. Because this college in common with all respectable American medical colleges now requires it as a part of its preliminary requirements, in conformity with the regulations of the American Medical College Association.

14. Because, for the new students, the forms of its requirement are most liberal and accommodating, a year being allowed for preparation.

11. Because through the liberality of our Faculty the opportunity of acquirement is offered to all of you—whether first, second, third, or fourth year students, free of cost.

EUGENE F. CORDELL, M.D.

Baltimore, Oct. 18, 1892.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Having received favorable responses to a letter addressed to all Southern Medical Colleges, we are authorized by them to say that a convention of their representatives will be held in Louisville, Ky., November 16, 1892, for the purpose of considering the question of a higher standard of medical education.

Yours fraternally,

W. T. BRIGGS,
G. C. SAVAGE.

NECROLOGY.

DR. JOHN JAMES REESE, of the University of Pennsylvania, died at Atlantic City, early in September. He was a toxicologist of national reputation, and had been identified with jurisprudential medicine and the University since 1865. He retired to an emeritus professorship in October of last year. He was the American editor of Taylor's seventh edition of the standard treatise on Medical Jurisprudence. He also published a college text-book or Manual of Toxicology, also an analysis of Physiology. In 1861, he served the Government as surgeon of volunteers, and was put in charge of the United States Hospital on Christian street, Philadelphia. He became the visiting physician to St. Joseph's Hospital and two or more other charitable institutions. He was in his seventy-fifth year at the time of his demise; he first joined the American Medical Association early in the fifties.

DR. JAMES HENRY STEUART, of Baltimore, died October 8, in the fifty-eighth year of his age. He was a native of that city, son of the late Gen. George H. Steuart. He was a graduate of Princeton College in 1855, and of the medical department of Maryland University two years later. "He leaves behind him a monument in the gratitude and love of those to whom his high life and labors were a blessing and an example." His final illness was one of prolonged and patient suffering. A widow and three children survive him.

BOOK REVIEWS.

THE LEGENDS OF ALASKA. By PROF. BUSHROD W. JAMES, M. D. Porter & Coates, Publishers, Philadelphia.

This exceedingly attractive little volume gives us a glimpse into the peculiarities of the people of Alaska, as well as the natural resources of wealth that are found in that portion of our Nation's domain. The book is made all the more readable by reason of its being written in the style of Hiawatha.

SIMPLE WATER TEST.—Into a ground glass stoppered, perfectly clean bottle put five ounces of the water to be tested. To the water add ten grains of pure, granulated, white sugar. Cork tight, and set in a window exposed freely to light but not to direct rays of the sun. Do not disturb the bottle, and keep the temperature as near 70° F. as possible. If the water contains organic matter, within forty-eight hours, an abundance of whitish specks will be seen floating about, and the more organic matter the more specks. In a week or ten days, if the water is very bad, the odor of rancid butter will be noticed on removing the stopper. The little specks will settle to the bottom, where they appear as white flocculent masses. Such water should not be used for potable purposes.

MISCELLANY.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION will hold its fifth annual meeting in the city of Louisville, Tuesday, Wednesday and Thursday, November 15, 16 and 17, 1892, under the presidency of Dr. J. McF. Gaston, of Atlanta. Members of the medical profession are cordially invited to attend. The following papers will be read:

The President's Annual Address, J. McFadden Gaston, M.D., Atlanta, Ga.

Cervicitis, Bedford Brown, M.D., Alexandria, Va.

Surgical Treatment of Endometritis, A. Vander Veer, M.D., Albany, N. Y.

Experiences in Pelvic Surgery, A. V. L. Brokaw, M.D., St. Louis, Mo.

Craniotomy upon the Living Fœtus is not Justifiable, Cornelius Kollock, M.D., Cheraw, S. C.

A Case of Extensive Hematocele Resulting from Tubal Pregnancy Rupturing into the Broad Ligament, W. D. Haggard, M.D., Nashville, Tenn.

Fibroid Tumor of Uterus—Pregnancy—Rupture at Fourth Month—Operation Six Weeks afterwards—Death, S. M. Hogan, M.D., Union Springs, Ala.

A Contribution to the Study of Abdominal Pregnancy, H. C. Coe, M.D., New York City.

Tubal Pregnancy, Joseph Price, M.D., Philadelphia, Pa.

Some Kidney Operations, with Remarks, Geo. Ben. Johnston, M.D., Richmond, Va.

Surgical Treatment of Inguinal Hernia in the Male, Henry O. Marcy, M.D., Boston, Mass.

The Symptoms of Fractures—Their Importance and Significance, W. C. Dugan, M.D., Louisville, Ky.

The Part that Rectal Diseases play in Women, J. M. Mathews, M.D., Louisville, Ky.

Poisoning by the Bite of the Southern Spider, J. T. Wilson, M.D., Sherman, Texas.

A Plea for More Rapid Surgical Work, Ap Morgan Vance, M.D., Louisville, Ky.

Specialism as Related to the Practice of Gynecology, Wm. Warren Potter, M.D., Buffalo, N. Y.

The Relation of the General Practitioner to Gynecology, R. M. Cunningham, M.D., Birmingham, Ala.

Morphology of Abdominal Tumors, Howard A. Kelly, M.D., Baltimore, Md.

Modern Researches in Relation to the Surgery of the Genito-Urinary Organs, G. Frank Lydston, M.D., Chicago, Ill.

Amputation of Breast for Malignant Disease, H. Horace Grant, M.D., Louisville, Ky.

Fecal and Other Fistulæ Following Abdominal Section, Joseph Taber Johnson, M.D., Washington, D. C.

Nature of Shock and Allied Conditions, Wm. C. Dabney, M.D., University of Virginia.

The Present Status of Drainage in Surgery, A. Morgan Cartledge, M.D., Louisville, Ky.

Cholecystotomy, with the Report of a Case, Edwin Ricketts, M.D., Cincinnati, Ohio.

Treatment of Stones in the Biliary Ducts, W. E. B. Davis, M.D., Birmingham, Ala.

Personal Recollections of Dr. Benjamin W. Dudley and his Surgical Methods, Bedford Brown, M.D., Alexandria, Va.

Intestinal Anastomosis without Mechanical Devices—Circulo-Lateral Enterorrhaphy, J. D. S. Davis, M.D., Birmingham, Ala.

(Title of paper not determined), Geo. H. Noble, M.D., Atlanta, Ga.

(Title of paper not determined), W. L. Robinson, M.D., Danville, Va.

(Title of paper not determined), W. Gill Wylie, M.D., New York City.

J. MCFADDEN GASTON, M.D., *President*.
W. E. B. DAVIS, M.D., *Secretary*.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS.—The second annual meeting will be held in the Academy of Medicine, 17 W. Forty-third St., New York City, Monday, November 14, 1892. The following papers will be read:

1. Conservative Surgery as Applied to Railway Injuries, Dr. R. S. Harnden, of Waverly. Discussion opened by Dr. L. S. Pilcher, of Brooklyn.

2. A Contribution to the Study of Amputations at the Hip-joint, Dr. J. B. Murdock, of Pittsburg. Discussion opened by Dr. John A. Wyeth, of New York.

3. Osteogenesis and Osteoplasty in Crushing Lesions of the Extremities, Dr. Thomas H. Manley, of New York. Discussion opened by Dr. Robert F. Weir, of New York.

4. President's Address.

5. Expert Examination and Testimony in Railway Cases, Dr. B. A. Watson, of Jersey City. Discussion opened by Dr. Stephen Smith, of New York.

6. The Transportation of the Wounded upon Railways, Dr. W. B. Outten, of St. Louis. Discussion opened by Dr. J. W. Galbraith, of Omaha.

7. Calendula as a Surgical Dressing, Dr. A. Wilson Dods, of Ferdonia.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from October 14, 1892, to October 20, 1892.

First Lieut. Samuel R. Dunlop, Asst. Surgeon, leave of absence granted is extended one month.

Major Johnson V. D. Middleton, Surgeon U. S. A., is granted leave of absence for one month, to take effect upon his relief from duty at Ft. Columbus, N. Y.

First Lieut. Allen M. Smith, Asst. Surgeon U. S. A., is relieved from further duty at Ft. Yellowstone, Wyo., and will proceed to Ft. Custer, Mont., and report to the commanding officer of that post for temporary duty.

Lieut.-Col. Charles R. Greenleaf, Deputy Surgeon-General, is appointed member of a board of officers, to meet at Helena, Mont., on the 1st day of November, 1892, or as soon thereafter as practicable, for the purpose of selecting a site for a military post at that place, as provided for under an Act of Congress approved May 12, 1892, entitled "An Act to establish a military post at or near the city of Helena, in Lewis and Clarke County, in the State of Montana."

OFFICIAL LIST OF CHANGES in the Medical Corps of the U. S. Navy, for the Week Ending October 22, 1892.

Asst. Surgeon L. W. Spratling, ordered to receiving ship "St. Louis."

Asst. Surgeon Lewis Morris, from receiving ship "St. Louis," and to the U. S. S. "Monocacy."

Asst. Surgeon George Rothganger, from the U. S. S. "Monocacy," and ordered to proceed home.

OFFICIAL LIST OF CHANGES of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Three Weeks Ending October 15, 1892.

Surgeon George Purviance, granted leave of absence for seven days. October 12, 1892

P. A. Surgeon C. E. Banks, to rejoin station at Portland, Me. October 14, 1892.

P. A. Surgeon S. C. Devan, ordered to Washington, D. C., for special duty. September 29, 1892.

P. A. Surgeon P. C. Kalloch, to rejoin station at Boston, Mass. October 14, 1892.

P. A. Surgeon Eugene Wasdin, to rejoin station at Charleston, S. C. October 3, 1892.

Asst. Surgeon W. P. McIntosh, to proceed to Buffalo, N. Y., for temporary duty, September 25, 1892. To proceed to Ellis Island for temporary duty, September 30, 1892. To report in person to the Supervising Surgeon-General, October 8, 1892. To rejoin station at New Orleans, La., October 10, 1892.

P. A. Surgeon W. J. Pettus, to proceed to New York, N. Y., for temporary duty. September 25, 1892.

P. A. Surgeon G. M. Magruder, to proceed to Tacoma, Wash., for special duty. October 7, 1892.

P. A. Surgeon J. O. Cobb, to rejoin station at Detroit, Mich. October 7, 1892.

P. A. Surgeon J. B. Stoner, to rejoin station at Pittsburgh, Pa., October 3, 1892. Granted leave of absence for seven days. October 4, 1892.

Asst. Surgeon M. J. Rosenau, relieved from duty at Cape Charles Quarantine, October 11, 1892. Granted leave of absence for thirty days. October 13, 1892.

Asst. Surgeon L. E. Cofer, granted leave of absence for three months on account of sickness. October 15, 1892.

Asst. Surgeon C. H. Gardner, to report to the medical officer in command, San Francisco, Cal., for duty. October 12, 1892.